REPORT RESUMES

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A SPEECH AND READING ENRICHMENT PROGRAM.
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DESCRIPTORS- *ENRICHMENT PROGRAMS, *READING INSTRUCTION, READING READINESS, *SPEECH INSTRUCTION, *SPEECH IMPROVEMENT, *KINDERGARTEN CHILDREN, SPEECH EDUCATION, SPEECH HANDICAPS, SPEECH SKILLS, ORAL EXPRESSION, ARTICULATION (SPEECH), BOULDER, COLORADO, SPEECH AND READING ENRICHMENT PROGRAM (SAREP)

THE EFFECTIVENESS OF A SPEECH AND READING ENRICHMENT PROGRAM (SAREP) FOR TEACHING YOUNG CHILDREN IN THE KINDERGARTEN CLASSROOM IMPROVED SPEECH HABITS WAS TESTED AND EVALUATED. SAREP TEACHES CHILDREN HOW SOUNDS ARE FORMED WITH THE ORAL MECHANISM AT THE SAME TIME THEY ARE BEING TAUGHT LETTERS AND SOUNDS IN THE SCHOOL READING READINESS PROGRAM. TWO MATCHED GROUPS OF KINDERGARTEN PUPILS WERE UTILIZED AS EXPERIMENTAL AND CONTROL GROUPS. A BATTERY OF TESTS WAS DEVELOPED TO MEASURE THE SPEECH PROFICIENCY AND READING READINESS OF THE CHILDREN BEFORE AND AFTER THE 17-WEEK EXPERIMENTAL PERIOD. RESULTS OF THE SAREP STUDY APPEAR TO SUPPORT THE FOLLOWING CONCLUSIONS--(1) THE GENERAL SPEECH PROFICIENCY OF KINDERGARTEN CHILDREN WITH LESS SERIOUS SPEECH DEVIATIONS IS IMPROVED WITH 17 WEEKS OF SAREP, (2) PHONEMIC PROFICIENCY OF CHILDREN WITH MORE SERIOUS SPEECH DEVIATIONS IS BENEFITED, (3) THE HIGHER LEVELS OF SPEECH PROFICIENCY OF KINDERGARTEN CHILDREN EXPOSED TO 17 WEEKS OF SAREP ARE MATCHED SEVERAL MONTHS LATER IN THE FIRST GRADE BY CHILDREN WHO HAVE HAD NO SAREP TRAINING, AND (4) READING READINESS IS NOT ENHANCED BY THE 17 WEEKS OF SAREP. THE STUDY SUGGESTS THAT THE MAJOR CONTRIBUTION OF THE ENRICHMENT PROGRAM TO KINDERGARTEN CHILDREN IS TO SPEED UP SPEECH DEVELOPMENT THAT WOULD TAKE PLACE MORE SLOWLY WITHOUT SAREP. (WB)

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A SPEECH AND READING ENRICHMENT PROGRAM

Cooperative Research Project No. 2299

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University of Colorado
Boulder, Colorado

1965

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CHAPTER I

BACKGROUND OF THE PROBLEM

The purpose of this study is to test the effectiveness of a particular method of teaching young children how to speak better at an important period in the development of their language and reading-readiness skills.

The method is referred to as a Speech and Reading Enrichment Program (SAREP) and will be described in detail in the Design Section (Chapter IV). The main characteristic of the method is that it teaches kindergarten children how sounds are formed with the oral mechanism at the same time they are being taught letters and sounds in the school reading-readiness program.[1]

Speech specialists believe there is a need for improving the current methods of teaching children how to talk.[2] At present, most children learn to talk without formal training. They learn, in many cases, through listening to the sounds of their environment, imitating those sounds, and responding to the casual prompting of parents, relatives, and friends.

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[1] Reading-readiness, as described by Paul McKee and M. Lucile Harrison in their Teacher's Edition of Getting Ready to Read, Boston, Houghton Mifflin Company, 1957, and as implemented by the schools in the present study through various techniques for auditory and visual stimulation, contains the following concept goals: 1. Using Spoken Context, 2. Distinguishing Letter Forms from One Another, 3. Listening for Beginning Sounds, 4. Associating Letter Sounds and Forms, 5. Using Spoken Context and Letter-Sound Associations, and 6. Using Spoken Context and the First Letter in a Printed Word.

[2] Andrew Thomas Weaver, Gladys Borchers, Donald K. Smith. The Teaching of Speech. New Jersey, Prentice-Hall, Inc., 1961, pp. 3,4.

These speech specialists question the efficacy of informal speech learning because not all speech environments are equally good. Some children learn to talk in environments that contain poor speech models, poor speech stimulation, and/or emotional tensions. Such speech environments can lead, they say, to several adverse outcomes:

1. Some children develop speech defects. Johnson estimates that 5 to 10 per cent of the nation's school population has detectable speech disorders, including defects in articulation, cleft palate speech, delayed speech, stuttering, voice problems, and speech problems connected with hearing disorders.[3] Of these disorders, three-fourths are articulation problems, many of which are primarily due to faulty learning habits.

2. Some children never learn to speak effectively. Irwin states that 17 per cent of the school population has poor speaking skills, such as inappropriate pronunciation and enunciation, and that most children learn to speak at only a minimum level of proficiency.[4] Poor speaking skills mean poorly-equipped spokesmen for an American society which depends for its vitality on an informed, articulate citizenry.

Speech defects and general speech ineffectiveness can lead to reading problems (see pp. 6-8). Two methods for dealing with speech defects and ineffective speech and avoiding the reading problems that sometimes result are: 1. speech pathology for dealing with speech defects; and 2. speech improvement for development of general speech effectiveness. Neither of these methods has proved entirely satisfactory.

Speech Pathology

A relatively new science has evolved to service speech defectives and study remedial speech methodology. The profession of speech pathology, which has gained momentum since World War II, studies the etiology, prevention, and improvement of speech defects. Speech correction programs are usually conducted in clinical settings, such as universities, hospitals and rehabilitation centers, and in public schools as a special education service.

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[3] Wendell Johnson, Spencer F. Brown, James F. Curtis, Clarence W. Edney, Jacqueline Keaster. Speech Handicapped School Children. New York, Harper and Brothers, 1956, p. xi of preface.

[4] Ruth Becky Irwin. "The Role of the Speech Therapist in the Speech Improvement Program." The Speech Teacher. Columbia, Missouri, November, 1960, p. 278.

Although remedial programs for speech correction have been part of some public school programs since 1910, not all schools offer these special education services. For example, in 1954, of the nearly 58,000 school districts in the United States, only 1,087 reported having speech correction services.[5] In addition, almost "one-half the schools in the United States do not have laws that recognize the special needs of speech defective school children," according to Johnson.[6]

When offered, these programs consist of individual and small group therapy conducted by speech correctionists in physical settings apart from the regular classrooms. Public school correctionists service children with all types of speech disorders: articulation, cleft palate, delayed speech, stuttering, etc. School speech service encompasses a variety of activities, including auditory training, articulatory production training, parent and teacher counseling, and follow-up procedures.

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[5] Mabel C. Rice and Arthur S. Hill. Statistics of Special Education for Exceptional Children 1952-1953, Chapter 5 of Biennial Survey of Education in the United States, 1952-1954, Office of Education, U.S. Department of Health, Education, and Welfare, 1954, Table I, p. 19.

[6] Johnson, et al, op. cit., p. x of preface.

Correction programs are reasonably effective with their remedial procedures. The most recent estimate is that school correctionists annually dismiss about one-third of the children they work with as no longer requiring speech correction help.[7] Despite this statistical success in correction, existing public school speech correction programs are inadequate for several reasons:

1. There aren't enough specialists to meet the estimated speech correction needs of the public schools. There is a national shortage of school speech correctionists today which shows no signs of abating. Statistics from the American Speech and Hearing Association indicate the need for 32,000 specialists to service speech and hearing needs in the public schools. At present there are only 7,000 specialists available.[8] Strained school budgets limit speech correction programs. School boards, faced with rising demands for classroom space and additional teachers, plus generally increasing costs, find little money left to initiate, expand or even study speech correction programs. Of the practicing public school correctionists, most have unreasonable case loads of 100 or more children per week, some as many as 300 per week. The greatest percentage of these cases (especially in the primary grades) are articulation problems. These represent about three-fourths of the total case load. Most speech specialists, therefore, are not free to concentrate on the more serious speech handicaps such as cleft palate, delayed speech, stuttering, or even the most difficult articulation problems. The present practice in most public school settings is that each child may receive once-a-week therapy for twenty or thirty minutes, sometimes individually, sometimes as a part of a group. Such a program leaves the speech correctionists little if any time for carrying out their other responsibilities, such as assisting teachers, providing for "carry-over" activities at home or in the classroom, or for parent counseling.

2. Speech correctionists do not have time to teach all young children how to speak more effectively. Only children with defective speech are serviced by most existing public school correction programs. Little is being done in the classroom to stimulate communication skills in all young children. Because speech correctionists don't have time to teach all children how to speak better, some public school children

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[7] M.E. Chapman, E.L. Herbert, C.B. Avery, and J.W. Selmar. "Clinical Practice: Remedial Procedures." Journal of Speech and Hearing Disorders (Monograph Supplement #8). June, 1961, p. 77.

[8] Gretchen M. Phair, Sibyl G. Ghalson, Vera M. Gee, Kathleen K. Pendergast. "Recruitment for Careers in Speech Pathology and Audiology." JSHD (Monograph Supplement #8). June, 1961, p. 106.

are not acquiring enough speech proficiency to lead to language arts skills proficiency.

3. A problem of stigma is attached to removal from class routine. Some speech specialists question the defensibility of removal of very young children from regular class routine for special speech correction work, especially for minor articulation errors.[9] In addition to the unavoidable practice of having some students miss academic work, these specialists are concerned with the psychological damage that may be done to children by singling them out as different.

Speech Improvement

Public school correctionists have attempted to handle minor speech defects more efficiently and improve general speech skills in all children by conducting speech improvement programs in the schools. Such speech improvement programs have been part of the public school program since 1922. These programs, conducted by the speech correctionist or the classroom teacher within the classroom setting, include a variety of group activities to develop good listening habits and good speech habits. A special period in each school day is set aside as "good speech time" for speech improvement drills and exercises. Auditory and visual devices are used, including records, pictures, songs, jingles and games.

These speech improvement programs (see Chapter III), however, are themselves inadequate for the following reasons:

1. They fractionalize the teaching of the language arts in the schools. Speech improvement programs become a separate school activity and are not integrated into the existing school curriculum.

2. They increase classroom duties of already overworked classroom teachers. When conducted by classroom teachers, speech improvement programs are planned as separate curriculum activities and add to teacher responsibility.

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[9] American Speech and Hearing Association Committee on the Mid-Century White House Conference. "Speech Disorders and Speech Correction." Journal of Speech and Hearing Disorders, Vol. 17, June, 1952, p. 129.

3. They increase correction duties of already burdened speech correctionists. When conducted by school speech correctionists, speech improvement programs add to the unrealistic case load of the correctionist.

4. They consume considerable classroom time. The variety of activities outlined for speech improvement programs requires a large block of school-day time, usually at least thirty minutes per day.

5. They offer empirical evidence of success which is open to question. Because a number of visual and auditory activities are introduced, there is uncertainty as to which activity has resulted in the speech improvement. The literature reveals no speech improvement program study which has attempted to control the differential teacher motivation variable.

The Reading Problem

According to many authorities, one of the language arts related to speech is reading (see Chapter III). For example, Loban in a study of the language of young children found that "reading, writing, listening, and speaking" show a positive relation.[10] This relationship seems to exist to the extent that a breakdown in the process of learning to talk may also affect the process of learning to read. A survey of the literature from 1932-1941 conducted by Gaines showed that "some relation exists between speech defects and reading disabilities."[11]

Further evidence that speech defects and reading disability are interrelated is found in Hildreth's 1946 study on the linguistic functioning of children.[12]

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[10] Walter D. Loban. "The Language of Elementary School Children." National Council of Teachers of English, Research Report No. 1, 1963.

[11] Frances P. Gaines. "Interrelation of Speech and Reading Disabilities." Elementary School Journal, 41, 1941, pp. 605-613.

[12] Gertrude Hildreth. "Speech Defects and Reading Disabilities." Elementary School Journal, 46, 1946, pp. 326-332.

In a later study (1948) Hildreth stated:

> Reading rests on a foundation of previously learned speech symbols. . . . The pupil ordinarily advances no faster in reading than his language development permits. . . . Not all children with speech defects have difficulty in reading nor do all children with reading difficulties have speech defects. However, speech defects can be important secondary causes of reading disability, even though they may not always be the sole or primary cause.[13]

Yedinack showed that four groups of second graders with functional articulation defects were "significantly inferior in both oral and silent reading to children with normal speaking ability." She further showed that children with reading disabilities frequently have articulation speech defects.[14]

Levina wrote that confusing written symbols is a "sign of a student's retarded speech development." In examining 3,000 pupils, she found that 23.4 per cent of the first graders had low levels of reading and writing "due to speech defects". The Russian author concluded that "speech defects seriously undermine pupils' progress in. . . reading ability."[15]

There is broad agreement, then, that learning to read is related to learning to talk, and breakdown may occur in both processes. Reading problems are one kind of breakdown in the process of learning to read.

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[13] Gertrude Hildreth. "The Interrelationships Among the Language Arts." Elementary School Journal, 48, 1948, pp. 538-549.

[14] Jeanette G. Yedinack. "A Study of the Linguistic Functioning of Children with Articulation and Reading Disabilities." Journal of Genetic Psychology, 74, 1949, pp. 23-59.

[15] R. Levina. "Speech Defects Result in Poor Progress at School." Soviet Education, 5, August, 1963, pp. 31-35.

There is a high incidence of serious reading problems in the public schools today where, according to Walcutt, 35 per cent of the school population has serious reading problems and "considerably more than half of the population does not read as it could."[16]

Because of the interrelationship of the language arts, there is some reason to believe that improving the way in which children learn to talk might improve the way in which they learn to read. As Fries says:

> The process of receiving a message through "talk" is a responding to the language signals of . . . a native language code--language signals that make their contact with . . . the nervous system by sound vibrations through the ear. The process of getting the same message (the same meanings) by "reading" is a responding to the same set of language signals of the same language code, but language signals that make their contact with . . . the nervous system by light vibrations through the eye. The message is the same; the language code is the same; the language signals are the same for both "talking" and "reading".[17]

It therefore seemed appropriate to study reading and speech problems together as the present research project attempted to do. In attempting to test the contribution that SAREP could make to speech learning, it also seemed worthwhile to determine whether the speech benefits were carried over into the area of reading.

There is a need for an efficient and effective way to teach young children how to speak better in order to stimulate general language arts learning and minimize speech articulation errors. The present study will test the effectiveness of the Speech and Reading Enrichment Program (SAREP) method of teaching speech to kindergarten children. SAREP incorporates and extends the benefits of speech improvement and speech correction programs while eliminating or minimizing the inadequacies of those programs in the following ways:

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[16] Charles W. Walcutt (ed.). Tomorrow's Illiterates. Boston, Little Brown and Co., 1961, p. 19.

[17] Charles C. Fries. Linguistics and Reading. New York, Holt, Rinehart and Winston, Inc., 1962, p. 119.

1. SAREP offers a systematic presentation of speech training. Specific speech sound exercises are used which follow the ordered presentation of letters in the Getting Ready to Read[18] workbook.

2. SAREP is conducted by the classroom teacher within the classroom setting. This eliminates negative student reaction to unfamiliar personnel and milieu.

3. SAREP is part of the reading-readiness program and helps to integrate the learning of the language arts. SAREP exercises enrich the existing reading-readiness program by introducing new readiness materials for auditory stimulation.

4. SAREP is a "whole-class" activity with no child being singled out for correct performance. In order to reduce stigmatization, participating SAREP teachers are cautioned against seeking correct responses from individual students.

5. SAREP shortens practice periods. SAREP exercises take ten to fifteen minutes of classroom time.

6. SAREP focuses on training in beginning sounds. Each SAREP exercise stresses sound formation of letters in the initial position.

7. SAREP allows for intra-class learning. The "whole-class" concept encourages learning from student to student by creating opportunity for group interaction.

8. SAREP attempts to control differential teacher motivation. Because each participating teacher has both an experimental and a control class, differential teacher motivation for each teacher is controlled. Differential teacher motivation without contamination will be explained in Chapter IV.

9. SAREP frees speech correctionists to work with the more seriously involved speech defects, to assist teachers, and to counsel parents.

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[18] Paul McKee and M. Lucile Harrison. Getting Ready to Read. Boston, Houghton Mifflin Co., 1957.

CHAPTER II

STATEMENT OF HYPOTHESES

The major hypotheses of this study are as follows:

1. The General Speech Proficiency of kindergarten children can be improved through SAREP.*

Does the General Speech Proficiency of children given SAREP training show greater improvement than that of comparable children who are not given such training?

2. The articulation of kindergarten children as demonstrated by Phonemic Proficiency can be improved through SAREP.

Do children with phonemic deviations show significant improvement as a result of SAREP training?

3. The reading-readiness proficiency of kindergarten children can be improved through SAREP.

When conventional reading-readiness training is offered, does SAREP supplementary training improve reading-readiness skills?

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*See Chapter IV, page 15, for SAREP definition of "General Speech Proficiency" criteria.

CHAPTER III

OVERVIEW OF THE LITERATURE

Programs for the improvement of the speech of school children have been in effect in the United States since 1922 and the number and extent of such programs have been growing steadily. However, research and publication on speech improvement programs are limited, due in part to the difficulty in controlling the variables in the school setting.

Existing research in the area of speech improvement can be divided into two classifications:

1. effectiveness of speech improvement programs on reading, spelling, and writing skill performance;
2. improvement of articulatory speech disorders through speech improvement programs conducted by the classroom teacher.

The effectivness of speech improvement programs on reading and spelling skill performance was demonstrated by Morris V. Jones (1951) who found that improvement in speech facility accelerates silent reading achievement.[19]

E. Y. Zedler in 1956 showed that written spelling performance changes significantly and favorably with phonetic training in speech sound discrimination.[20]

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[19] Morris V. Jones. "The Effect of Speech Training on Silent Reading Achievement." Journal of Speech and Hearing Disorders, XVI, (1951), pp. 258-263.

[20] E.Y. Zedler. "Effect of Phonic Training on Speech Sound Discrimination and Spelling Performance." Journal of Speech and Hearing Disorders, XXI (1956), pp. 245-250.

Karlene V. Russell et al developed a system of strengthening students' spelling power by training their auditory discrimination abilities.[21]

Two comprehensive studies (1961-2) by Ronald K. Sommers et al demonstrate that speech improvement affects reading skills, as expressed in reading factor scores, in a significant and positive way.[22]

Two unpublished reports of speech improvement programs, conducted by classroom teachers, show the benefits of in-class training in reducing the number of articulatory speech disorders in primary grade children:

Edna Mae Wilcox studied fifteen Pittsburgh experimental classes in which teachers aided with consonant articulation drills in Grades 1, 2, and 3, and found "effective results especially in the first grade level." [23]

Donald B. Rice demonstrated that speech stimulation done by classroom teachers with first and second grade children in the Marion County

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[21] Karlene V. Russell, Helen A. Murphy and Donald D. Durrell. Developing Spelling Power. New York, World Book Company, 1957.

[22] Ronald K. Sommers, and others. "Effects of Speech Therapy and Speech Improvement Upon Articulation and Reading." Journal of Speech and Hearing Disorders, XXVI (1961), pp. 27-38.

Ronald K. Sommers, and others. "Effects of Various Durations of Speech Improvement Upon Articulation and Reading." Journal of Speech and Hearing Disorders, XXVII (1962), pp. 54-61.

[23] Edna Mae Wilcox. "The Effect of Speech Improvement Activities, Conducted by the Classroom Teacher, Upon Consonant Articulation of Children in Grades 1, 2, and 3." Unpublished M.S. Thesis, University of Pittsburgh, 1959.

School District of Indianapolis, Indiana resulted in improvement of some misarticulated sounds.[24]

In addition, Wilson reported in 1954 on a twelve-week speech improvement program for 242 kindergarten children, with classroom teachers conducting the lessons. The lesson materials used included picture cards, easel boards, object boxes, stories, poems and games. Lessons were conducted for thirty to sixty minutes each day. Wilson found that articulation improved on sounds included in the lessons and also on sounds not included in the lessons. Reading-readiness scores of experimental classes showed no improvement over those of control classes.[25]

The above mentioned research and other traditional speech improvement studies are subject to question because:

1. a variety of activities were introduced at one time with resultant uncertainty as to which type or types of activities were the most helpful; and

2. no attempts were made to control the differential teacher motivation variable.

Traditional speech improvement programs as cited above do not meet SAREP specifications for teaching speech to young children because:

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[24] Donald B. Rice. "Role of Speech Therapist in Helping the Teacher with Speech Improvement." Paper presented to the Ohio Speech and Hearing Convention in April, 1960.

[25] Betty Ann Wilson. "The Development and Evaluation of a Speech Improvement Program for Kindergarten Children." Journal of Speech and Hearing Disorders, 19, 1954, pp. 4-13.

1. practice periods were long, usually at least thirty minutes, and consumed considerable classroom time.

2. no specific provisions were made for maintenance of a "whole-class" activity approach to insure that no child was singled out for correct performance.

3. integration of the language arts was not emphasized.

4. beginning-sounds training was not emphasized.

CHAPTER IV

EXPERIMENTAL DESIGN AND PROCEDURE

The present investigation was conducted during a period of twenty-three months from September 1963 to August 1965. There were three phases of operation with some procedures extending into a subsequent phase.

The first phase (September 1963 to December 1963) consisted of:

1. selection of subjects;
2. development of a manual to be used by the participating teachers;
3. development of a battery of tests for the measurement of the speech and reading-readiness effectiveness of the subjects;
4. measurement of subject hearing proficiency;
5. orientation of participating teachers to experimental goals and procedures.

The second phase (January 1964 to August 1964) consisted of:

1. training speech performance tapers, raters, individual reading-readiness testers and teacher evaluation interviewers;
2. pre- and post-SAREP speech taping of all subjects;
3. conducting SAREP with experimental groups;
4. testing for measurement of subject reading-readiness skills;
5. measurement of teacher evaluation of SAREP;
6. analysis and interpretation of data.

The third phase (November 1964 to August 1965) consisted of:

1. training new tapers and raters;
2. retesting all subjects for hearing proficiency, speech effectiveness, and reading-readiness effectiveness;
3. analysis and interpretation of data.

Phase I

Selection of Subjects

Criteria for Selection

The available population for this study was drawn from the Boulder Valley School District RE No. 2 public kindergartens in Boulder County, Colorado. The specific classes selected from the total kindergarten population of District RE No. 2 met the following criteria:

1. The classes followed the Exposure to Reading Program using the Getting Ready to Read workbook. Because the SAREP hypotheses had stated that SAREP could enrich reading-readiness skills as well as improve speech performance, it was necessary to present SAREP in classrooms stressing reading-readiness skills. The most direct reading-readiness skills taught in RE No. 2 kindergartens were in classes involved in the Exposure to Reading Programs, as determined by the RE No. 2 Director of Elementary Education.

2. The classes maintained a regular school schedule. Some kindergartens in RE No. 2 were on split sessions during the time limitations of this study and were not included in the experiment.

3. Each teacher instructed both an A.M. and P.M. session of kindergarten. One class was given the experimental material and the other class served as the control group. This arrangement provided the necessary control on the differential teacher motivation variable.

4. No criteria were set for subject deletion from the present study because of minor organic anomalies or physioneurological disturbances. For the purposes of this study it was assumed that attendance in a public school setting was sufficient grounds for inclusion in the SAREP research.

Description of Sample

The subjects chosen for this study present a cross-section of the Boulder Valley School District RE No. 2 population and are generally representative of the socio-economic character of Boulder, Colorado which is predominantly middle-class and professional. One school, predominantly lower class, was included in the study. The sample includes 420 subjects from six schools with eight teachers meeting sixteen classes.

Speech correction for kindergarten children was introduced in the Boulder Valley District RE No. 2 schools for the first time during the 1963-4 school year. In the original planning for SAREP, no subject was to receive speech correction for the length of the SAREP study. Due to an administrative error resulting from the implementation of the expanded speech correction program, forty-two SAREP subjects received speech correction while participating in the present study. These subjects were analyzed in the total study and also by separate analyses.

Subjects selected for this study were tested for differences in scholastic readiness with the Metropolitan Readiness test by means of analysis of variance and the differences were found to be not significant. (See Table 1 below.)

TABLE 1

Comparison of Metropolitan Readiness Test Scores for SAREP and Control Groups (in Percentiles)

N = 420

	N	Mean	Variance	*t	df	Sig. Level
SAREP	201	78.079	579.4	.012	409	N.S.
Control	219	78.106	553.3			

* Two-tailed test

The Metropolitan Readiness Test was used to measure control-experimental group differences in scholastic readiness because this test is part of the battery of routine tests given to all Boulder Valley School District RE No. 2 kindergarten children, and is a standardized test recognized as presenting a reasonable measure of overall scholastic readiness.

The difference in sex distribution among the groups was measured and was not significant. (See Table 2 below.)

TABLE 2

Male and Female Composition of

SAREP and Control Groups

N = 420

	SAREP	Control
Male	98	119
Female	103	100

The chronological age range, as of January 1, 1964, was sixty to seventy-eight months, with a mean of 68.8 months. Differences in chronological age between A.M. and P.M. classes were measured and found to be significant. (See Table 3 below.)

TABLE 3

Comparison of Means on Chronological Age

for A.M. and P.M. Groups

N = 420

	N	Mean in months	*t	df	Sig. Level
A.M.	227	66.6	7.231	670	$p<.005$
P.M.	193	71.1			

* Two-tailed test

These age differences were anticipated because District RE No. 2 kindergarten assignments are made on the basis of chronological age, i.e., in general, younger pupils are assigned by the RE No. 2 administration to A.M. kindergartens, and older pupils to P.M. kindergartens.

To control for the age differential, experimental and control classes were randomized in the present study. In addition, randomization controlled the time differential variable between A.M. and P.M. classes and also assured no duplication of experimental-control designation for teachers within any given school.

Development of Manual

(See Appendix A)

The development of a SAREP manual involved a cooperative effort by the SAREP staff and the participating teachers. Various speech books were used as resource material for SAREP speech exercises.[26] Some SAREP exercises are variations of traditional speech correction exercises; others were devised by the SAREP staff. All SAREP exercises were discussed with the participating teachers concerning clarity, usefulness, and projected effectiveness. The SAREP manual calendar was coordinated with the school calendar.

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[26] V.A. Anderson. Improving the Child's Speech. New York, Oxford University Press, 1953.

M.F. Berry and J. Eisenson. Speech Disorders. New York, Appleton-Century-Crofts, Inc., 1956.

E.M. Nemoy and S.F. Davis. The Correction of Defective Consonant Sounds. Magnolia, Mass., Expression Company, 1954.

C. Van Riper and J.V. Irwin. Voice and Articulation. Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1958.

The manual used in the present study consists of 35 pages of exercises for a set of twelve letters (S = M, D, F, G, B, S, T, P, K, J, L, R). Nine letters (M, D, F, G, B, T, P, K, J) are presented for one school week each. Three letters (S, L, R: the more commonly defective speech sounds of the set) are presented for two school weeks each. There are two review weeks scheduled in the manual, one review week occurring in the ninth week and one occurring in the seventeenth week.

Each presentation week of the manual contains:

1. sound introduction exercises;
2. sound reinforcement exercises;
3. sound recall exercises;
4. sound review exercises.

The design of the manual meets the following criteria:

1. Letters are stressed as sounds. In order to emphasize the speech aspects of the letters introduced from the Getting Ready to Read workbook, the SAREP manual translates the set of letters into a set of sounds which these letters make.

2. Key sound words are assigned. Each sound is assigned a key word as a graphic stimulator for subject interest and as an illustrative representation of the articulatory activity involved in making that sound.

3. Exercises are varied and are related to the reading-readiness workbook, Getting Ready to Read. The SAREP sound exercises follow the letter presentation order in the Getting Ready to Read workbook and use nineteen exercise variations for sound practice.

4. Key sound word presentation is incorporated into daily exercises. Each exercise reinforces the presentation of the sound by a preliminary review of the initial key sound word presentation.

5. Auditory discrimination activities are stressed. All exercises focus on listening skills.

6. The placement of sound represents generally accepted methodology. Numerous speech sources were consulted and a consensus was arrived at for the particular sound placement description selected for each SAREP sound.[27]

A SAREP lesson plan for one school week follows:

Lesson 1. Monday

"Girls and boys, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: rabbit, ruler, rake, rainbow, rattle, radio, etc. They all start with the 'r' sound. I like to call the 'r' sound the ROCKET SOUND because that's how we make the sound with our mouths and tongues--just like a rocket being launched.

"The rocket is our tongue and our mouth is the launching pad. We must be good rocketeers and launch our rockets off the rocket pad. Whenever we make the ROCKET SOUND, we have to launch our rockets off the pad by lifting the front of our tongue up from the bottom of our mouth.

"Watch and listen how I make the ROCKET SOUND. (ROCKET) Now, let's all be good rocketeers and launch our rockets off their launching pads. Remember, lift the front of your tongues as you say 'ROCKET.' (ROCKET) That was fine, girls and boys. You're being good rocketeers."

Lesson 2. Tuesday

"Girls and boys, you remember yesterday we learned about the ROCKET SOUND and how we have to be good rocketeers and lift our rockets off their launching pads? Do you suppose we have all remembered about lifting the front of our tongues from the bottom of our mouths? Watch and listen to my ROCKET SOUND. (ROCKET) Now let's see if you have remembered how to be good rocketeers. Let's all launch our rockets together and say 'ROCKET.' (ROCKET) That was very good, girls and boys. I can tell that you are learning to be good rocketeers now.

"The mirror is on the book table for you to practice being good rocketeers. When you have time, you may go to the table and practice your ROCKET SOUNDS."

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[27] M.F. Berry and J. Eisenson. Speech Disorders. New York, Appleton-Century-Crofts, Inc., 1956.

C. Van Riper. Speech Correction, 4th ed. Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1963.

R. West, M. Ansberry and A. Carr. Rehabilitation of Speech, 3rd ed., New York, Harper & Bros., 1957.

Lesson 3. Wednesday Auditory Discrimination Game

"Boys and girls, you remember that we have been learning how to make a good ROCKET SOUND? Let's all make the ROCKET SOUND together. Remember, be good rocketeers and lift the front of your tongue from the bottom of your mouth when you use the ROCKET SOUND. (ROCKET) That was fine. Now, today I thought we could play a game with the ROCKET SOUND. I'm going to point to some things around our schoolroom that start with the ROCKET SOUND, and you are to name the things, making a good ROCKET SOUND." (Teacher points to various objects starting with 'r': ruler, rabbit, red, rope, etc. Teacher joins in making the appropriate response and in emphasizing the beginning sound of the 'r' words.)

"Now I'm going to change the game a little. I'm going to point to some things that start with the ROCKET SOUND as I did before, but some of the things I point to will not start with the ROCKET SOUND. If the things do not start with the ROCKET SOUND, do not say anything. Be good watchers and good listeners and don't let me trick you."

Teacher points to objects around the room and the children are encouraged to give the appropriate answer. Teacher joins in making the response and in emphasizing the beginning sound of the "r" words. It is suggested that the objects other than "r" be things starting with "w," such as wall, window, wastebasket, etc. (The "w" is suggested because the usual sound substitution in a speech disorder of the "r" is the "w".)

Lesson 4. Thursday

"Today, boys and girls, I thought we could play a game with our new ROCKET SOUND. You remember how to make the ROCKET SOUND, don't you? Let's all make the ROCKET SOUND together and remember to lift your tongue from the bottom of your mouth. (ROCKET) You are certainly getting to be good rocketeers.

"Now, let's all pretend we are rockets and are being launched. Let's all crouch down on the floor and I can start the count-down. When I reach zero, we can all jump up and pretend we are blasting off into space. As we blast off, we can make our ROCKET SOUND. Remember to lift your tongue from the bottom of your mouth as you say 'ROCKET.'"

Lesson 5. Friday Naming Names Game

"Today, boys and girls, I thought we could play a naming game with our ROCKET SOUND. You remember how to make the ROCKET SOUND, don't you? Let's say it once together. Remember, your tongue is the rocket and the bottom of your mouth is the launching pad. (ROCKET) Very good. Now we can play the Naming Names Game. Let's look around the room and say the names of all the boys and girls whose names start with the ROCKET SOUND. Remember, when we say the names, to make them start with good ROCKET SOUNDS."

The children say the names in unison with the teacher who helps them by emphasizing the "r" in the names. Suggested names are: Ruth, Robert, Richard, Rebecca, Rita, Raymond, Roy, Rachel.

Development of Test Battery

The test battery used in the present study consists of tests for measurement of speech effectiveness of kindergarten children and tests for measurement of reading-readiness of kindergarten children. The tests to measure speech effectiveness used in this study consist of two parts:

1. a modification of the Bryngelson-Glaspey picture articulation test. The Bryngelson-Glaspey test was selected because it is a standardized picture stimulation test that is easy to administer. The SAREP modification of the Bryngelson-Glaspey test includes 44 items. (See Appendix B.) Variations were made in certain items to allow for modernization of the test. For example, the original Bryngelson-Glaspey test uses "davenport" as the picture stimulation item for the "v" sound medially; the SAREP test uses "television" for the "v" sound medially.

2. a connected discourse speech stimulation test. (See Appendix C.) This test consists of a situational picture used to elicit further responses from the subjects. The picture is adapted from the Let's Talk book[28] and was selected because it is a graphic, action picture that includes non-threatening concepts and items familiar to the kindergartener.

The SAREP modification of the Bryngelson-Glaspey and the connected discourse tests were administered one month prior to official presentation to five randomly-selected kindergarten children not in the SAREP study. Information gathered from the trial testing showed: 1. ease of administration; 2. clarity and appropriateness of test items; 3. length of testing time required.

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[28] Paul McKee and M. Lucile Harrison. Let's Talk. Boston, Houghton Mifflin Co., 1947.

The specific tests to measure reading-readiness used in this study consist of two parts:

1. Houghton Mifflin Pre-Reading Inventory, Part II Diagnostic Test (Tests 3 and 4). The Inventory was presented because it is a standardized group test related to the Getting Ready to Read workbook used in the SAREP study. Part II Diagnostic Test (Tests 3 and 4) of the Inventory was used because the reading-readiness skills tested were those most closely approximating the reading-readiness skills taught by SAREP.

2. SAREP Individual Reading-Readiness Test. (See Appendix D.) The rationale for development of an individual reading-readiness test comprises the following:

   a. An individual reading-readiness test to validate the group readiness test presented was believed essential.

   b. A reading-readiness test specifically designed to test SAREP-taught skills was believed essential.

The SAREP reading-readiness test is arranged with four pictures on each test page, in order to be consistent with the method of item presentation in the Houghton Mifflin Pre-Reading Inventory Test. The material includes two totally incorrect response pages, two pages with more than one correct response per page, some acoustically similar pictures, and randomized letter presentation order. Pictures representing SAREP key-words were included. Two types of test were presented: one in which the subjects matched letters and pictures, and one in which the subjects matched beginning sounds and pictures. Permutations on two tests were predetermined for all subjects. In addition, for some subjects, groupings of all four tests were presented as a control on the permutation variable. (See Appendix E.)

One week prior to the administration of the SAREP Individual Reading-Readiness test, a series of trial tests were administered to five randomly-selected kindergarten children not in the SAREP study. Information gathered from the trial testing included: 1. ease of administration; 2. clarity and appropriateness of test questions; 3. length of testing time required.

Measurement of Hearing Proficiency

Hearing screening of all subjects using the individual pure-tone sweep (500, 1000, 2000 and 4000 cps) was administered in the schools with Beltone 10A audiometers. Pre-SAREP hearing testing was done in October and November 1963 to allow for late school entrants and stabilization of school routine. Hearing screening was administered by audiology technicians from the Speech and Hearing Clinic at the University of Colorado, and followed the screening techniques prescribed by Newby.[29]

Subjects who failed to respond appropriately at any frequency of this screening were referred to the University of Colorado Hearing Clinic for complete hearing threshold evaluations. Subjects with severe hearing losses were eliminated from the present study. Subjects with mild-moderate hearing losses were retained in the study to test the efficiency of SAREP as an auditory stimulant for speech in hard-of-hearing pupils. The subjects with diagnosed mild-moderate hearing losses randomized through the SAREP and control groups. (See Table 4 below.)

TABLE 4

Hearing Loss Composition of

SAREP and Control Groups

N = 420

	N	Mild Loss	Moderate Loss
SAREP	201	1	2
Control	219	2	1

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[29] Hayes A. Newby. Audiology. New York, Appleton-Century-Crofts, Inc., 1964, p. 205.

Hearing retesting was done in the schools in May 1964 to detect possible hearing deviations developed during the course of the study. Hearing testing procedures used were those employed in the hearing testing described above. No additional hearing deviations to those found originally were detected among the subjects.

Orientation of Participating Teachers

Teacher motivation was felt to be an essential factor in the possible outcome of the present study. In addition, prevention of contamination of the study (by teacher presentation of SAREP procedures to control groups) had to be obtained. Several measures were used to orient teachers, to stimulate teacher commitment to SAREP, and to prevent contamination.

1. Individual Interview. Participating teachers were oriented to the purpose and methods of SAREP at a series of intensive individual interviews in the fall of 1963. Questions were answered about SAREP methodology and philosophy. Included in the individual interview was discussion concerning:

   a. administration of SAREP exercises using the SAREP manual and the Getting Ready to Read workbook.

   b. separation of experimental class activities from control class activities to prevent contamination of the study.

   c. prevention of stigmatization of any subject by maintaining the "whole-class" aspect of SAREP.

   d. emphasis of beginning-sounds training of SAREP.

2. Workshop. The first workshop of participating teachers was held in January 1964 immediately preceding the introduction of SAREP into the classrooms. Questions were answered about SAREP speech testing procedures and the implementation of SAREP by the participating teachers. The SAREP manual was discussed and altered. Discussions were held about contamination and stigmatization problems. Seven participating teachers attended this workshop. (The chief investigator saw the absent teacher individually later, and gave her the workshop information.)

The second participating teacher workshop was held in March 1964 to discuss current problems of SAREP implementation and speech, reading-readiness and hearing testing procedures. Discussions were held about contamination problems, stigmatization problems and beginning-sounds training. Eight participating teachers attended this workshop.

3. Newsletter. Six newsletters were distributed to participating teachers to keep them informed on SAREP developments. (See Appendix F.) Some of the problems discussed in the newsletters include:

a. contamination of control groups by SAREP exercises.

b. stigmatization of subjects by singling out for correct performance.

c. dentition disturbances as related to speech sound efficiency.

d. alteration of manual calendar to allow for changes in school schedules.

4. Classroom Visitation. The chief investigator made four visits to each SAREP classroom from January to May 1964. She observed the implementation of SAREP procedures, made suggestions, and discussed problems with the participating teachers. In general, the subjective evaluations of the classroom visitations were:

a. Participating teachers were using proper SAREP procedures, although there were a few instances of singling children out for correct responses.

b. Children seemed to grasp and enjoy SAREP activities.

c. There was some intra-class learning displayed. Children attempted to help each other with SAREP sound performance.

Phase II

Training Tapers, Raters, Testers and Interviewers

Training of Speech Tapers

Speech pathology technicians from the Speech and Hearing Clinic at the University of Colorado were trained as tapers at a series of intensive training sessions held in January 1964 before the pre-SAREP taping of all subjects. Each technician was taught tape recording procedures and given a list of instructions for taping. (See Appendix G.) Training was structured to minimize variations in taping methodology. Untrained technicians who had not been involved in pre-SAREP taping were trained as tapers for the post-SAREP taping at a workshop held in May 1964.

Training of Speech Raters

Speech raters met the following criteria:

1. graduate level of competence in speech pathology;
2. experience with International Phonetic Alphabet;
3. normal hearing acuity.

Three speech pathologists from the University of Colorado Department of Speech and Drama were trained as raters for the SAREP study. The raters consisted of one Ph.D., one M.A. and one graduate student. Raters were trained at two workshop meetings by rating anonymous tapes individually and discussing rating results cooperatively.

The speech of each subject was evaluated in two ways: (See Appendix H.)

1. Articulation performance was rated. The SAREP modification of the Bryngelson-Glaspey articulation test was scored by raters from

anonymous tape recordings. Scoring on the 202 phonemes presented in the 44 items was by the International Phonetic Alphabet with omissions, substitutions, additions and distortions noted in symbol.

2. General Speech Proficiency was rated. An overall speech performance rating was made on each subject by raters from anonymous tape recordings. A rating judgement was made for this test from the connected discourse on the basis of the overall conversational speech behavior of the subject and included articulation, level of vocabulary, grammatical construction, complexity of sentences, and vocal inflection. Ratings were designated by number as follows: 1 = excellent speech proficiency; 2 = average speech proficiency; 3 = poor speech proficiency.

Consistency and Agreement of Raters

In the present study all final evaluations on the General Speech Proficiency and the Phonemic Proficiency of each subject are determined by composite agreement of two out of the three raters. Where there was no agreement among the three raters, the particular item was not scored.

Despite composite agreement, there might be some question about the establishment of a reasonable degree of consistency in rater judgment in analyzing the results of a test where appraisal of qualitative and quantitative change is in large part subjective. Therefore, inter-rater reliability on General Speech Proficiency and Phonemic Proficiency scoring was determined.

Inter-rater reliability on General Speech Proficiency was determined by correlating the means of overall ratings for the three raters and by correlating individual rating means with the composite scores for pre-SAREP (Round I) and post-SAREP (Round II). From Tables 5 and 6 the ratings of the three trained speech pathologists are shown to have adequate inter-rater reliability on General Speech Proficiency of subjects.

TABLE 5

Round I Inter-Rater Reliability
on General Speech Proficiency

	R1	R2	R3
C	.86	.85	.96
R1		.72	.81
R2			.80

R = Raters
C = Composite Score

TABLE 6

Round II Inter-Rater Reliability
on General Speech Proficiency

	R1	R2	R3
C	.85	.88	.91
R1		.73	.75
R2			.79

R = Raters
C - Composite Score

Inter-rater reliability on Phonemic Proficiency was determined by dividing the sum of the phonemic deviations by the discrepancy among raters for 25 sample SAREP tests. As shown in Table 7 the ratings of the three trained speech pathologists have adequate inter-rater reliability on Phonemic Proficiency scoring.

TABLE 7

Inter- and Intra-Rater Reliability

on Phonemic Proficiency

Raters	1	2	3
1	.97	.76	.62
2		.96	.74
3			.97

It was also important to establish the level of intra-rater reliability to determine the degree of consistency in rating of each individual rater. Raters were checked as to intra-rater reliability by 25 anonymous SAREP tape retests selected and administered by a non-rater. Retest tape ratings were analyzed against original tape ratings.

Intra-rater reliability proportions were determined on General Speech Proficiency by comparing test-retest raw scores for each rater. Phonemic Proficiency was determined by dividing the sum of the phonemic deviations by the discrepancy ratings between test-retest for each rater.

Proportional results on test-retest for General Speech Proficiency were:

Rater 1 = .96

Rater 2 = .92

Rater 3 = .94

Proportional results on test-retest for Phonemic Proficiency scoring can be seen in Table 7.

On the basis of these proportional test-retest results, it is proper to assume that there was high intra-rater reliability for the present study.

Training of Individual Reading-Readiness Test Testers

Testers from the University of Colorado School of Education were trained to administer the SAREP Individual Reading-Readiness Test at a pre-test workshop in May 1964. They were shown samples of the test, given commands to present to the subjects, and oriented to the testing situation. (See Appendix I.) Training emphasis was on tester-subject interrelationship with particular attention given to the individual subject response differential.

Training of Teacher Evaluation Interviewers

Three female interviewers from the University of Colorado were trained in interviewing techniques at a workshop help in May 1964. The interviewers consisted of two senior students of speech pathology and one senior student of psychology. The major emphasis of the interviewing training was on interviewer-teacher relationships in order to obtain teacher cooperation in the aims of the interview.

Speech Taping of all Subjects

Pre-SAREP speech screening of all subjects was administered at the schools in one week of January 1964 by speech tapers using Wollensak T-1500 tape recorders at a speed of 7½. Taping was done by number with no identification of SAREP or control groups.

Post-SAREP speech screening was administered at the schools in one week of May 1964 using the same techniques employed in the taping described above.

Conducting SAREP with Experimental Groups

The SAREP exercises were scheduled within regular hours of the public school day. Duration of the exercises averaged ten to fifteen minutes per day. Teachers related the SAREP exercises to the Getting Ready to Read workbook by specific reference to workbook items.

SAREP was initiated in the classrooms January 13, 1964 and terminated May 15, 1964.

Testing for Measurement of Reading-Readiness Skills

The Houghton Mifflin Pre-Reading Inventory, Part II Diagnostic test (Tests 3 and 4) was given to all subjects in May 1964 by the participating teachers.

The SAREP Individual Reading-Readiness Test was administered in all schools to all subjects by the trained testers in May 1964.

Measurement of Teacher Evaluation of SAREP

Teacher evaluation of SAREP was considered an important criterion of SAREP success. Data on participating teacher evaluation of SAREP were gathered by the following subjective measures:

1. questionnaire; 2. interview; 3. workshop.

1. Questionnaire. There were two questionnaires administered by mail to participating teachers. Questionnaire I with open and closed-ended questions about SAREP methods, purpose and effectiveness was completed by participating teachers in May 1964. (See Appendix J.) Questionnaire II duplicating Questionnaire I in content, was completed by participating teachers in June 1964. It was felt that a second questionnaire was desirable in order to determine delayed teacher reaction to SAREP, and in order to validate previous findings. (See Appendix J.)

2. Interview. Trained interviewers from the University of Colorado interviewed participating teachers at school sites in June 1964 for reactions to SAREP. Interviews by non-SAREP personnel were considered an additional measure of teacher reaction to SAREP. The interviews contained open-ended questions about SAREP methods, purpose and effectiveness to which teachers were encouraged to reply subjectively.

3. Workshop. A cooperative teacher evaluation of SAREP purpose, methods and effectiveness was made at a participating teacher workshop in May 1964 as an additional measure of teacher reaction to SAREP. No SAREP staff member and no school administrators were present at the workshop in order to allow freedom of opinion. The teachers mailed the workshop final report to SAREP headquarters. (See Appendix K.)

Treatment of the Data

Because of the size of the sample in the present study, data were scored on IBM cards and processed for computer analysis. (See Appendix L.) Analyses of changes on all measures were carried out on all schools combined and school-by-school. These analyses showed that no significant differences were found as to school except for School No. 4. As expected, School No. 4 was different because of the lower socio-economic character of its population as compared with the middle-class character of the general parameter.

General Speech Proffciency was measured by comparing SAREP-Control group scores on overall speech ratings of 1, 2, and 3 for pre-SAREP (Round I) and post-SAREP (Round II) rounds.

Because of the small number of scored omissions, substitutions, additions, and distortions, phonemic deviations were collapsed and a Total Phonemic Proficiency score (number of correct phonemes) was determined. The data on Phonemic Proficiency were treated in two ways to measure global and more refined results:

1. Total Phonemic Proficiency was measured by comparing SAREP-Control group total scores for Round I and Round II.

2. Quartiles were established on the basis of the Round I Total Phonemic Proficiency Scores in order to compare SAREP-Control group Phonemic Proficiency in more detail.

The data on reading-readiness were treated by comparing SAREP-Control group performance on the Houghton Mifflin Reading-Readiness Test general scores and the SAREP Individual Reading-Readiness Test general scores. In addition, an item analysis of the SAREP Individual Reading-Readiness Test scores was made to determine results on specific SAREP items. No item analysis was possible on the Houghton Mifflin Reading-Readiness Test because of the low ceiling of the test.

Where appropriate, comparisons of means were made by t-test. Comparisons of frequencies were made by chi-square and chi-square with partitioning.[30] Correlations of item scores with total scores were made by point biserial or biserial correlations.

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[30] See N. John Castellan, Jr. "On the Partitioning of Contingency Tables." Psychological Bulletin, 1965, (in press) for discussion of partitioning.

PHASE III

In addition to measuring the effects of SAREP in Phases I and II, it seemed useful to seek answers to two additional questions:

1. If the SAREP group showed any greater proficiency over the Control group in speech or reading, would that greater proficiency remain over a period of time after SAREP had been discontinued?

2. Over a period of time after SAREP had been discontinued, would any SAREP advantages become evident that were not evident in the results of Phase II?

To get answers to these questions, most of the speech and reading tests administered in Phases I and II were given again when the subjects were in the first grade several months after SAREP had been discontinued. In this new phase, Phase III, a number of adjustments in design and procedure had to be made because of the dispersion of subjects throughout Boulder County schools, both public and private, and because of changes in school and testing personnel. Some of the subjects had moved to schools not involved in Phases I and II. The number of schools involved in Phase III was 24, an increase of 18 over Phases I and II. The number of teachers involved in Phase III was 58, an increase of 50 over Phases I and II. Fourteen subjects had moved from the Boulder County area altogether and were unavailable for retesting. The sample for Phase III was 406 subjects, instead of the 420 in the earlier phases.

All Phase III procedures approximated those used in Phases I and II except for the following adjustments:

1. New tapers and raters had to be trained for Round III speech evaluations. There was a change in speech pathology technicians at the University of Colorado and the tapers and raters from Rounds I and II speech testing were not available for Round III. Round III tapers and raters were trained using the same techniques as in Rounds I and II. The three newly-trained raters in Round III were graduate students in speech pathology and audiology at the University of Colorado. They generally showed adequate inter- and intra- rater reliability, as seen in Tables 8 and 9, but were not as reliable as the raters in Rounds I and II (see Tables 5, 6, and 7). Round III speech taping was done in March 1965.

TABLE 8

Round III Inter-Rater Reliability

on General Speech Proficiency and *Phonemic Proficiency

	R4	R5	R6
C	.68	.74	.82
R4		.46 *.64	.50 *.54
R5			.54 *.74

R = Raters

C = Composite Score

TABLE 9

Round III Intra-Rater Reliability on General Speech Proficiency (GSP) and Phonemic Proficiency (PP)

Rater	GSP	PP
4	.76	.80
5	.82	.88
6	.88	.87

2. New hearing testing methods were used. Boulder Valley School District RE #2 routinely checks hearing proficiency of all public school first grade students. Hearing screening in Boulder County private schools is routinely done by Boulder County public health nurses. These resources were utilized rather than duplicate hearing screening with University of Colorado personnel. No new hearing problems were found in the Phase III hearing screening.

3. The Houghton Mifflin Pre-Reading Inventory was given in three ways:

by first grade teachers to public school subjects during November-December 1964;

by SAREP personnel to public school subjects during March 1965; and

by first grade teachers to private school subjects during March 1965. The various groupings were necessitated by the difficulties encountered in locating some subjects.

4. No SAREP Individual Reading-Readiness Tests were administered in Phase III. Because of the high scores obtained by the subjects on the first SAREP Individual Reading-Readiness Test, there was slight margin for improvement to be demonstrated by more testing.

The intervalsbetween the discontinuation of SAREP and the administration of the various Phase III tests were as follows:

Houghton Mifflin Pre-Reading Inventory = six to ten months

SAREP Speech Evaluation Tests = ten months

CHAPTER V

RESULTS

The present study set out to investigate the validity of three major hypotheses:

I. That General Speech Proficiency of kindergarten children can be improved through SAREP.

II. That the articulation of kindergarten children as demonstrated by Phonemic Proficiency can be improved through SAREP.

III. That the reading-readiness proficiency of kindergarten children can be improved through SAREP.

Hypothesis I: General Speech Proficiency

Test results for General Speech Proficiency were analyzed on the basis of three overall speech ratings: 1 = Excellent, 2 = Average, 3 = Poor. (See Chapter IV.) Round I ratings (pre-SAREP) indicated the SAREP and Control groups were well matched since there were no significant differences between the groups as shown in Table 10a.Round II ratings (post-SAREP) indicated there were significant differences between SAREP and Control groups with the greatest improvement in SAREP group Ratings 1 and 2.

TABLE 10a

General Speech Proficiency Ratings for

SAREP and Control Groups in all Schools

N = 420

	Round I						Round II					
	Rating						Rating					
	1	2	3	X^2	df	Sig. Level	1	2	3	X^2	df	Sig. Level
SAREP	55	100	46				147	31	23			
				2.84	2	N.S.				17.15	2	$p < .001$
Control	76	98	45				123	71	25			

A null hypothesis that the SAREP group and the Control group do not differ in their Round II General Speech Proficiency Ratings was tested and rejected beyond the .001 level of significance. These results lead to the conclusion that the SAREP groups showed significantly higher general speech improvement than the Control group.

It seemed useful to analyze the General Speech Proficiency Ratings by partitioning in order to determine inter-rating movement for Round II. Results of partitioning can be seen in Table 10b.

TABLE 10b

Comparison by Partitioning of

Round II General Speech Proficiency Ratings

Ratings	df	X^2	p
1 x 2	1	17.15	$p<.001$
(1 - 2) x 3	1	.00	N.S.
Total	2	17.15	$p<.001$

An examination of Table 10b reveals that the major impact of SAREP training was significantly felt by the groups with Ratings of 1 and 2 as evidence by the obtained $X^2 = 17.15$. Table 10b also indicates that the improvement for SAREP and Control subjects with Rating 3 was not significantly different. Therefore, it is reasonable to say that SAREP was most effective in improving the General Speech Proficiency of subjects who had less serious speech deviations because the primary source for improvement was between Ratings 1 and 2 and not out of Rating 3.

Analyses were made of the age and sex distributions of the General Speech Proficiency Ratings in Table 10a, but no meaningful differences were found.

On the basis of the strength of the Round II General Speech Proficiency improvement of the SAREP group as indicated in Tables 10a and 10b, the results of the present study tend to support Hypothesis I insofar as it pertains to subjects with less serious speech deviations (Ratings 1 and 2) but not insofar as it pertains to subjects with more serious speech deviations (Rating 3).

Hypothesis II: Articulation

Test results for articulation performance were analyzed on the basis of mean Phonemic Proficiency Scores, i.e., number of correct phonemes, on 202 phonemic items. Two different types of articulation scores were obtained for comparing Round I and Round II results: (1) Total Phonemic Proficiency Scores, and (2) Phonemic Proficiency Scores by Quartile. Total Phonemic Proficiency Scores on Round I ratings indicated the SAREP and Control groups were well matched since there were no significant differences between the groups as shown in Table 11. Total Phonemic Proficiency Scores on Round II ratings indicated there were significant differences between SAREP and Control groups as shown in Table 11.

TABLE 11

Mean Total Phonemic Proficiency Scores for SAREP and Control Groups in all Schools

N = 420

Round I

	N	Mean	Variance	*t	df	Sig. Level
SAREP	201	188.1	103.1			
				1.286	419	N.S.
Control	219	186.8	136.8			

* One-tailed test

Round II

	N	Mean	Variance	*t	df	Sig. Level
SAREP	201	195.8	55.5			
				3.362	419	$p < .005$
Control	219	193.3	61.2			

* One-tailed test

A null hypothesis that the SAREP group and the Control group do not differ in their Round II Total Phonemic Proficiency Scores was tested and rejected beyond the .005 level of significance. (See Table 11) From the results it can be concluded that SAREP training brought about highly significant Total Phonemic Proficiency improvement in the SAREP group.

Phonemic Proficiency Scores by Quartile for Q1 (first quartile), Q2, and Q3 on Round I ratings indicated the SAREP and Control groups were well matched since there were no significant differences between the groups as evidenced by the t-test scores for these Quartiles in Table 12a.

TABLE 12a

Phonemic Proficiency Scores by Quartile
for SAREP (E) and Control (C) Groups on Round I in all Schools
(quartiled on basis of Round I Total Phonemic Proficiency Scores)

N = 420

	N	Mean	Variance	*t	df	Sig. Level
Q1 E	48	197.9	2.9	1.341	101	N.S.
C	60	198.4	2.9			
Q2 E	57	192.6	2.9	.716	110	N.S.
C	54	192.8	3.1			
Q3 E	44	185.5	4.3	1.038	95	N.S.
C	52	185.9	5.0			
Q4 E	52	170.5	128.6	1.839	86	$p < .05$
C	53	173.9	50.6			

* One-tailed test

Q4 (fourth quartile) Phonemic Proficiency Scores on Round I indicated differences between SAREP and Control groups beyond the .05 level of significance in favor of the Control group. (See Table 12a.)

Phonemic Proficiency Scores by Quartile on Round II rating indicated there were significant differences for Q1, Q2, and Q3 between SAREP and Control groups as evidenced by the t-test scores in Table 12b. There were no meaningful statistical differences for Q4 between SAREP and Control groups on Round II.

TABLE 12b

Phonemic Proficiency Scores by Quartile
for SAREP (E) and Control (C) Groups on Round II in all Schools
(quartiled on basis of Round I Total Phonemic Proficiency Scores)

N = 420

	N	Mean	Variance	*t	df	Sig. Level
Q1 E	48	200.5	3.7	5.026	98	$p < .005$
C	60	197.9	11.1			
Q2 E	57	199.2	3.8	5.001	77	$p < .005$
C	54	196.2	15.3			
Q3 E	44	196.5	17.6	2.536	92	$.01 > p > .005$
C	52	193.8	36.9			
Q4 E	52	187.3	88.6	1.440	104	N.S.**
C	53	184.7	83.8			

* One-tailed test

** because of variability

A null hypothesis that the SAREP group and the Control group do not differ in their Round II Phonemic Proficiency Scores by Quartile was tested and rejected as follows: for the first quartile, the hypothesis was rejected beyond the .005 level of significance; for the second quartile, the hypothesis was rejected beyond the .005 level of significance; and, for the third quartile, the hypothesis was rejected beyond the .01 level of significance. For the fourth quartile, the hypothesis was not rejected but the results were in the hypothesized direction because of the variability of the Round I and Round II data, i.e., the Round I Control scores were significantly higher than the Round I SAREP scores whereas the Round II SAREP scores reversed and were higher than the Round II Control scores. (See Table 12a and 12b.) Although the reversal was not measured by the methods employed in the present analysis, the gross results for Q4 indicated a trend in the hypothesized direction. These Phonemic Proficiency by Quartile results can be interpreted to mean that SAREP training had a greater impact on subjects in Q1, Q2, and Q3, which correspond roughly to Rating 1 and Rating 2.

On the basis of the general strength of the Round II Phonemic Proficiency improvement shown in the SAREP group as demonstrated by the total results and the results by Quartile, the present study tends to support strongly Hypothesis II insofar as it pertains to subjects with less serious speech deviations in Q1, Q2, and Q3 but less strongly insofar as it pertains to subjects with more serious speech deviations in Q4.

Hypothesis III: Reading-Readiness

Test results for reading-readiness performance were analyzed on the basis of the number of correct items scored in two distinct reading-readiness tests, the Houghton Mifflin Pre-Reading Inventory (Tests 3 and 4) and the SAREP Individual Reading-Readiness Test (Tests A, B, C, and D). In addition, an item analysis using point-biserial correlations was made on the SAREP Individual Reading-Readiness Test (Tests A, B, C, and D). Reading-readiness scores on the Houghton Mifflin Inventory indicated there were no significant differences between SAREP and Control groups as evidenced by the critical ratios for Tests 3 and 4 in Table 13.

TABLE 13

Critical Ratios on Houghton Mifflin
Pre-Reading Inventory (Tests 3 and 4) for
SAREP (E) and Control (C) Groups

	Number of Times E > C	*Z	Sig. Level
Test 3	10/14 = .714	1.33	N.S.
Test 4	6/18 = .333	1.18	N.S.
Total	16/32 = .500		

* One-tailed test

Reading-readiness scores on the SAREP Individual Reading-Readiness Test indicated there were no stable differences between SAREP and Control groups as evidenced by the mean number correct scores for Tests A, B, C, and D in Table 14.

TABLE 14

Mean Number Correct on SAREP
Individual Reading-Readiness Test
(Tests A, B, C, and D)
for A.M. and P.M. SAREP and Control Groups

	A.M. SAREP		A.M. Control	P.M. SAREP		P.M. Control
Test A	(1) 6.9	*	7.9	(5) 8.3		9.0
Test B	(2) 10.8		10.6	(6) 11.4	**	12.3
Test C	(3) 10.0		9.9	(7) 11.3		11.8
Test D	(4) 8.9		9.9	(8) 11.6		12.0

* $p < .05$ One-tailed test
** $.01 < p < .025$ One-tailed test

An examination of Table 14 revealed that two of the eight cells, cell (1) and cell (6), indicated significant differences between SAREP and Control groups in favor of the Control groups. However, because there were no significant differences in the remaining six cells, there was reason to treat the differences in cells (1) and (6) as spurious.

The item analysis of the SAREP Individual Reading-Readiness Test indicated no significant differences between SAREP and Control group performance on Tests A, B, C, and D for SAREP and non-SAREP sounds. (See Appendix M.)

On the basis of the evidence obtained from the three reading-readiness analyses, the results of the present study do not support Hypothesis III.

Participating Teacher Evaluation

The three subjective techniques used to summarize participating teacher evaluation of SAREP methods and philosophy were questionnaire, interview, and workshop.

Questionnaire I. (See Appendix J.) The results on the first questionnaire given to the eight participating teachers were as follows:

1. Did SAREP fit easily into the Reading-Readiness Program? Yes [illegible] No 1
2. Were the children able to understand and follow SAREP exercises? Yes 8 No 0
3. How would you rate the students' enthusiasm for the SAREP exercises? High 6½ Medium 1 Low ½
4. How would you rate your enthusiasm for the SAREP exercises? High 7 Medium 1 Low 0
5. Did the application of a name to each sound assist in:
    a. establishing the beginning sound concept Yes 7 No 1
    b. sound/letter recognition Yes 6 No 2
    c. general auditory discrimination Yes 7 No ?
    d. more precise articulation of individual sounds Yes 7 No ?
6. Did you have any examples of pupils criticizing other pupils for mispronunciation of beginning sounds? Yes 0 No 8
7. Were props helpful? Yes 7 No 1

Questionnaire II. (See Appendix J.) The second questionnaire, which was identical to Questionnaire I and was administered to the same teachers one month later, yielded the following results:

1. Yes 6½ No 1½
2. Yes 8 No 0
3. High 7 Medium 1 Low 0
4. High 8 Medium 0 Low 0

5. a. Yes 7 No 1
   b. Yes 6 No 2
   c. Yes 7 No 1
   d. Yes 7 No 1
6. Yes 0 No 8
7. Yes 6½ No 1½

The change in responses from Questionnaire I to Questionnaire II were slight and suggested that the original responses to Questionnaire I were a valid indication of teacher reaction to SAREP. In general, the questionnaire responses indicated that the eight participating teachers found SAREP easy to use, that the children and teachers enjoyed the SAREP exercises, and that SAREP was a helpful teaching method.

Interview. The results compiled from the open-ended question interviews with the eight participating teachers conducted by non-SAREP personnel on an individual basis were as follows:

1. General impressions of SAREP Positive 7 Negative 1
2. SAREP as aid to sound concepts Positive 7 Negative 1
3. Future use of SAREP Positive 8 Negative 0

The participating teachers generally indicated in the interview sessions that they liked and enjoyed using SAREP, that it aided their teaching, and that they planned to use SAREP again but in a less structured form than was necessary for research purposes. The individual interviews were conducted in the month between Questionnaire I and Questionnaire II and did not reflect the partial change in one teacher's attitude toward SAREP.

Workshop. (See Appendix K.) The participating teachers reported in the group workshop evaluation that they found SAREP beneficial. The workshop group comments mailed to SAREP headquarters summarized as follows:

1. SAREP was valuable.
2. SAREP seemed to help minor speech defects.
3. SAREP use of names for sounds was generally good.
4. SAREP manual should be a point of departure for teachers.
5. Naming names game in the SAREP manual was unsuccessful.
6. SAREP should be used before reading-readiness workbooks.
7. Developmental speech order of sound introduction would be preferable to sound introduction order used in SAREP.

The participating teachers indicated through the various subjective summary techniques employed (questionnaire, interview, and workshop) that SAREP was a generally worthwhile method for teaching sounds to kindergarten children when used in an unstructured form that allowed for adaptation to individual classroom needs.

Therapy vs. No-Therapy Subjects

As noted above in Chapter IV, forty-two subjects received speech correction while participating in the present study. The data cited in the major Results section of Chapter V included these forty-two subjects who were distributed between the SAREP and Control groups. (See Table 15.)

TABLE 15

Number of Subjects by Quartile Receiving

Speech Therapy in SAREP and Control Groups

(Derived from Round I General Speech Proficiency Ratings)

N = 42

	SAREP	Control
Q1	1	0
Q2	2	2
Q3	4	5
Q4	16	12
Total	23	19

It is interesting to note the distribution of subjects receiving therapy in the four quartiles (See Table 15) These results tend to support the validity of the General Speech Proficiency Ratings employed in the present study in that there were fewer therapy subjects (those with more involved speech deviations as diagnosed by school speech correctionists) in Q1 and progressively more in subsequent quartiles.

Q4 (fourth quartile), which contained more therapy subjects than the other quartiles, was analyzed for Therapy vs. No-Therapy differences on General Speech Proficiency and Phonemic Proficiency as seen in Tables 16 and 17.

TABLE 16

Q4 Therapy vs. No-Therapy

Mean General Speech Proficiency Ratings

N = 105

	Round I		Round II	
	N	Mean Ratings	N	Mean Ratings
ET	16	3.0	16	2.6
EN	36	2.7	36	2.0
CT	12	3.0	12	3.0
CN	41	2.6	41	2.1

E = experimental group (SAREP) T = therapy group

C = control group N = no-therapy group

TABLE 17

Q4 Therapy vs. No-Therapy

Mean Total Phonemic Proficiency Scores

N = 105

	Round I		Round II	
	N	Mean Scores	N	Mean Scores
ET	16	162.2	16	181.7
EN	36	174.2	36	189.8
CT	12	170.3	12	175.5
CN	41	174.9	41	187.4

E = experimental group (SAREP)

C = control group

T = therapy group

N = no-therapy group

The data in Table 16 suggest that those subjects in Q4--those with the most speech deviations--who received SAREP training alone (EN) improved more in General Speech Proficiency than those who received SAREP training plus speech therapy (ET) or those who received speech therapy alone (CT).

The data in Table 17 suggest that Q4 subjects who received SAREP training plus speech therapy (ET) improved more in Phonemic Proficiency than those who received SAREP training alone (EN) or those who received speech therapy alone (CT).

The differences observed in General Speech Proficiency and Phonemic Proficiency between the SAREP group receiving speech therapy (ET) and the Control group receiving speech therapy (CT) could be interpreted to mean that SAREP training would benefit subjects receiving public school speech correction. Further, the differences observed in General Speech Proficiency and Phonemic Proficiency between ET and CT when compared with the group receiving SAREP training alone (EN) could be interpreted to mean that SAREP training would benefit young school children more than speech correction. However, the size of the sample was too small for meaningful statistical analysis or more detailed interpretation of the data.

Socio-Economically Dissimilar School

One of the eight schools in the present study was different from the others in that most of the students in that school were from the lower socio-economic class. By comparing the speech test results of that Dissimilar School, i.e., predominantly lower class, with the speech results of the total schools sample, i.e., all schools in the study, several interesting results were noted. Round I General Speech Proficiency Ratings indicated that the SAREP and Control Dissimilar School groups were well matched since there were no significant differences between the groups as shown in Table 18a. Round II ratings indicated there were significant differences between SAREP and Control Dissimilar School groups with the greatest improvement in Ratings 1 and 2 of the SAREP group.

TABLE 18a

General Speech Proficiency Ratings for SAREP and Control Groups in Socio-Economically Dissimilar School

N = 46

Round I

	Rating					
	1	2	3	X^2	df	Sig. Level
SAREP	4	10	7			
				.545	2	N.S.
Control	4	10	11			

Round II

	Rating					
	1	2	3	X^2	df	Sig. Level
SAREP	15	5	1			
				7.193	2	$.05 > p > .02$
Control	8	13	4			

When compared with the results for the total schools sample in Table 10a, the General Speech Proficiency Ratings of the Dissimilar School suggested that the SAREP improvement approximated the SAREP total schools improvement in that the major movement was in Ratings 1 and 2. (See Table 18a.) However, the change in proportional improvement moving out of Rating 3 tended to be stronger for the SAREP Dissimilar School (86 per cent) than for the SAREP total schools (50 per cent).

Round I Total Phonemic Proficiency Scores indicated that the SAREP and Control Dissimilar School groups were well matched since there were no significant differences between the groups as shown in Table 18b; Round II scores indicated there were significant differences between SAREP and Control Dissimilar School groups in favor of the SAREP group.

TABLE 18b

Mean Total Phonemic Proficiency Scores
for SAREP and Control Groups in
Socio-Economically Dissimilar School

N = 46

Round I

	N	Mean	Variance	*t	df	Sig. Level
SAREP	21	186.4	88.6			
				1.205	42	N.S.
Control	25	184.9	55.2			

* One-tailed test

Round II

	N	Mean	Variance	*t	df	Sig. Level
SAREP	21	196.4	11.9			
				3.755	35	$p < .005$
Control	25	189.8	61.6			

* One-tailed test

When compared with the results in Table 11, the Phonemic Proficiency Scores for the Dissimilar School indicated that the subjects in the Dissimilar School had lower scores on Round I than did the subjects in the total schools sample. (See Table 18b.) An examination of Table 18b indicated a net change from Round I to Round II for the Dissimilar School of 4.9 in Total Phonemic Proficiency Scores for the Control group whereas the SAREP group indicated a net change from Round I to Round II of 10. A comparison with Total Phonemic Proficiency Scores for the total schools sample (see Table11) indicated that the Control group had a net change from Round I to Round II of 6.5 and the SAREP group had a net change of 7.7 from Round I to Round II. Therefore, the Dissimilar School subjects, who started with lower scores and improved less maturationally, demonstrated more improvement through SAREP training than the total schools sample.

The results of the Dissimilar School vs. total schools sample comparisons, if confirmed by more meaningful statistical analyses with a larger sample, could be interpreted to mean that SAREP was a beneficial method with advantaged children and an even more beneficial method with disadvantaged children.

Generalized Phoneme Improvement

The 202 phonemes used in the SAREP speech evaluation (see Appendix B) were analyzed to determine if there was improvement in articulation of phonemes in addition to the 12 SAREP stressed phonemes. As can be seen in Table 19, some phonemes (97) had to be deleted because few deviations were made on those phonemes and no analysis was possible.

TABLE 19

Comparison of Improvement of

SAREP Phonemes and Other Phonemes

for SAREP (E) and Control (C) Groups

N = 202 Phonemes

	N	#of Times E>C	# of Times E<C	# of Times E = C	No Analysis
SAREP Phonemes	85	49	3	3	30
Other Phonemes	117	35	9	6	67
Total	202	84	12	9	97

Of the remaining 105 phonemes in Table 19, 84 showed more improvement in the SAREP group than in the Control group. The conclusion can be made that SAREP training resulted in generalized learning of sounds in addition to the SAREP sounds stressed in the lessons.

Special Sounds

SAREP sounds presented for one-week training (M,D,F,G,B,T,P,K, J) and SAREP sounds presented for two-week training (S,L,R: the more commonly defective speech sounds) were analyzed but no meaningful differences were found between the learning effects of the one-week training and the two-week training periods.

PHASE III

Speech Results

The long-range speech effects of SAREP on the subjects studied in Phases I and II were evaluated by analyzing the Round III General Speech Proficiency Ratings and the Phonemic Proficiency Scores.

The Round III General Speech Proficiency results indicated no meaningful differences between the SAREP and Control groups as seen in Table 20a.

TABLE 20a

Round III General Speech Proficiency

Ratings for SAREP and Control Groups

N = 206

	Rating 1	 2	 3	X^2	df	Sig. Level
SAREP	94	88	14			
				5.78	2	N.S.
Control	122	81	7			

It seemed useful to analyze the Round III General Speech Proficiency Ratings by partitioning in order to determine inter-rating movement. Partitioning indicated no differences in inter-rating movement between the two partitions as seen in Table 20b.

TABLE 20b

Comparison by Partitioning of Round III General Speech Proficiency Ratings

Ratings	df	X^2	p
1 x 2	1	2.78	N.S.
(1-2) x 3	1	3.00	N.S.
Total	2	5.78	N.S.

The Round III Phonemic Proficiency results indicated no meaningful differencesbetween the SAREP and Control groups as seen in Table 21.

TABLE 21

Round III Mean Total Phonemic Proficiency Scores for SAREP and Control Groups

N = 406

	N	Mean	Variance	*t	df	Sig. Level
SAREP	196	192.8	27.4	1.336	388	N.S.
Control	210	193.5	20.4			

* One-tailed test

These Round III General Speech Proficiency and Phonemic Proficiency results can be interpreted to mean there were no statistically significant long-range speech effects of SAREP.

Reading-Readiness Results

The long-range reading-readiness effects of SAREP on the subjects studied in Phases I and II were evaluated by analyzing the Phase III Houghton Mifflin Pre-Reading Inventory test results but no meaningful differences were found.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS

In interpreting the results of the present study, it is important to give special consideration to three propositions that tend to emerge from the data:

1. That SAREP helps the speech of children with less serious speech deviations more than it helps those with more serious speech deviations.

2. That the benefits of SAREP are temporary in that normal maturation brings about as much improvement over a period of time.

3. That SAREP does not strengthen reading-readiness skills.

This chapter will present a discussion of these three propositions, a group of conclusions, and implications for kindergarten teaching and speech therapy as well as implications for further research.

Less Serious vs. More Serious Speech Deviations

SAREP proved to be a successful short-term method for improving the general speech and articulation proficiency of kindergarten children with less serious speech deviations, but it was less successful with children having more serious speech deviations. The partitioning of the Round II General Speech Proficiency Ratings, in fact, indicated no improvement at all in SAREP Rating 3 beyond the maturational improvement in Rating 3 of the Control group. (See Table 10b.) In the Round II Phonemic Proficiency Scores by Quartile (Table 12b) the mean score of SAREP subjects in Quartile 4 was not significantly higher than that of the Control subjects in the same quartile. But the SAREP mean scores were significantly higher in the other three quartiles.

These results are not entirely unexpected in view of the following considerations:

1. More serious speech deviations are usually more difficult to correct.

2. More serious speech deviations often have psychological or physiological etiologies. There may have been some subjects in the sample with psychologically or physiologically caused speech problems and these subjects would have tended to be classified in Rating 3 or Quartile 4. The speech of these subjects would have been less responsive to the SAREP improvement techniques.

3. SAREP was conducted for only 17 weeks and it would have been remarkable if it had done very much to correct the more serious speech deviations in such a short period of time.

Even if SAREP was less successful with the more serious deviations, however, there are at least some indications in the results that some improvements actually did take place. These indications can be found through analyses of the quartiled Phonemic Proficiency Scores and the Therapy vs. No-Therapy results.

The subjects in Q4 -- those with the more serious speech deviations -- show improvement in Phonemic Proficiency when an alternate method -- analysis of the gain factor -- is employed in analyzing the quartiled Phonemic Proficiency Scores. (See Table 22.)

TABLE 22

Mean Phonemic Proficiency Improvement of SAREP (E) and Control (C) Group Scores by Quartile

(Derived from Tables 12a and 12b)

Quartile	Group	Gain
Q1	E	2.6
	C	-.5
Q2	E	6.6
	C	3.4
Q3	E	11.0
	C	7.9
Q4	E	16.8
	C	10.8

In all four quartiles in Table 22, there are higher Round II gains in the mean scores of the SAREP groups than in the Control groups. Assuming the gains in the Control groups to be due to maturation, the differences between the SAREP and Control gains can be attributed to SAREP. These net SAREP gains are:

Q1 = 3.1

Q2 = 3.2

Q3 = 3.1

Q4 = 6.0

The 6.0 SAREP gain in Q4 must be discounted to some extent because of the high degree of variability indicated for this group in Table 12a. With a SAREP variance of 128.6, it is possible that a few subjects in this group had exceptionally low scores on Round I. If these subjects made exceptionally high gains on Round II, their scores could raise the gain for the group to a degree that would not represent the characteristic improvement of the group as a whole. For this reason, the 6.0 SAREP gain has to be reduced-- perhaps by half. In any case, it appears that the gain in Phonemic Proficiency of SAREP subjects in Q4 was higher than the gain of Control subjects. There is a suggestion here --if not strong proof --that SAREP did improve the Phonemic Proficiency of subjects with more serious speech deviations.

There was also some indication that the gain in Phonemic Proficiency among SAREP subjects in Quartile 4 was greater than the gain among subjects in the Q4 Control group who received speech therapy. (See Table 23.)

TABLE 23

Improvement in Q4 Mean General Speech Proficiency Ratings (GSP) and Phonemic Proficiency Scores (PP) of SAREP (E) and Control (C) and Therapy (T) vs. No-Therapy (N) Groups by Rank

(Derived from Tables 16 and 17)

N = 105

Group	GSP Gain	Rank	PP Gain	Rank
ET	.4	3	19.5	1
EN	.7	1	15.6	2
CT	0.0	4	5.2	4
CN	.5	2	12.5	3

Table 23 suggests, in fact, that SAREP alone was more beneficial to Q4 subjects than speech therapy alone both in Phonemic Proficiency and General Speech Proficiency. The sample on which Table 23 is based was small (N = 105), and the results will require further verification. These results were not anticipated when the present study was designed. The data for subjects not receiving therapy, however, show a gain in fourth quartile Phonemic Proficiency through SAREP beyond the gain that came through normal maturation. That gain--3.1 phonemes-- is approximately the same as the adjusted fourth quartile gain attributed to SAREP in the analysis of the Table 22 data above.

Temporary Benefits

The Round III speech results suggest that the benefits of SAREP are temporary in that normal maturation brings about as much improvement over a period of time. However, these results may not be entirely precise for two reasons:

1. There is some question about the consistency of the Round III raters as compared with those of Rounds I and II. They showed adequate but not high reliability, as seen in Tables 8 and 9. They were graduate students in training, not experienced speech pathologists as were the raters in Rounds I and II. There is reason to believe that the Round III raters tended to be more critical in their ratings than the raters of Round I and Round II. The Round I and Round II ratings indicated a gain of 6.5 phonemes in the mean Phonemic

Proficiency of the Control group during the 17 weeks of SAREP. But 10 months later, the Round III raters found no further gain in Phonemic Proficiency at all in the Control group. It seems unlikely that normal maturation would bring a decided gain in 17 weeks and none at all in 10 months, especially since the mean proficiency of the Control group was 2.5 phonemes below the SAREP group at the Round II level. There was, in short, room for improvement, but the Round III ratings did not indicate that any maturational improvement had taken place. Also, in evaluating General Speech Proficiency, the Round III ratings for the Control group do not indicate any maturational movement into Rating 1.

The theory that the Round III raters were more critical than the raters of Rounds I and II would also help to explain the two phoneme decrease in the mean proficiency of the SAREP group between Rounds II and III and the drop of 53 SAREP subjects from Rating 1 in the General Speech Proficiency Ratings. While it is not improbable that the speech of SAREP subjects failed to improve beyond the high level of Round II, it seems unlikely that the speech of these subjects would have grown worse in both phonemic and general proficiency to the extent indicated by the Round III ratings.

If one were to accept the theory that the Round III raters were more critical-- but still consistent-- it would be reasonable to increase the mean Phonemic Proficiency Scores of both the SAREP and Control groups and increase them by the same amount. If the mean Phonemic Proficiency of the SAREP group had remained the same between

Rounds II and III, it would be necessary to raise the Round III score three phonemes from 192.8 to 195.8. The same phonemic increase of three phonemes would raise the Control group mean to 196.5. These revised data-- matched by similar adjustments in the data on General Speech Proficiency -- would be consistent with the proposition that the SAREP group made no further improvement from the high level it had attained in Round II and that the Control group caught up through maturation.

2. The design and procedures of Round III may have biased the speech results. The proliferation of schools, teachers, and testing situations in the final phase of SAREP introduced some variables that were not present in Rounds I and II.

Despite these variables and the differences in raters, however, there is reason to accept the Round III results as meaningful because of their similarity to various psychological findings on maturation in the literature. Johnson and Medinnus report on several studies of phylogenetic skills -- "those abilities such as walking or toilet performance, that are common to all humans" -- which demonstrate that early training in such skills achieves no permanent improvement beyond that brought about through maturation.[31] The SAREP speech results are consistent with the Johnson and Medinnus analysis of the transitory effects of early training on some developmental skills.

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[31] Ronald C. Johnson and Gene R. Medinnus, Child Psychology, New York: John Wiley & Sons, Inc., 1965, pp. 76-77.

The Round III speech results further show a continuation of the reduction in variability noted throughout the SAREP study. As can be seen from the Phonemic Proficiency variance data in Tables 11 and 21, there was a consistent decrease in variability from Round I to Round II to Round III for both SAREP and Control groups. The maturational pattern evident in these variability figures is consistent with the Round III results in that it shows the tendency of children whose speech develops more slowly to reach eventually the level of those whose speech develops more rapidly. SAREP speeds up the development, but it does not carry it beyond the level attained through maturation. On the other hand, SAREP may have brought speech improvement to some children whose speech might not otherwise have developed to the level of their peers.

Effects on Reading-Readiness

The reading-readiness tests indicate that SAREP does not strengthen reading-readiness skills. The SAREP results, thus, tend to agree with the Wilson findings that a speech improvement program does not necessarily result in generalized learning of a less directly related task with subtle skills, like reading. (See Chapter III, p. 13.)

However, in the present study there is some question about the precision of the reading-readiness results. The reading consultant responsible for Phase II reading-readiness testing became ill at the time when the testing should have been arranged. As a result, all Phase II reading-readiness tests were given later in the school year than planned, and the results may have been affected by end-of-school-year pressures.

An additional factor possibly affecting the Phase III reading-readiness results was the dispersion of subjects to various schools at the Grade I level. This dispersion led to a proliferation of classroom teachers responsible for reading instruction and to unstable testing situations because of the variety of classrooms involved.

Whatever effect these circumstances may have had on the precision of the data, it does not impair the conclusion that SAREP does not strengthen reading-readiness skills when it is used for 17 weeks.

The Conclusions

In the light of the above analyses, the results of the SAREP study appear to support the following conclusions:

1. That in 17 weeks SAREP helps improve the General Speech Proficiency and Phonemic Proficiency of kindergarten children with less serious speech deviations.
2. That in 17 weeks SAREP contributes some benefit to the Phonemic Proficiency of kindergarten children with more serious speech deviations.
3. That the higher levels of General and Phonemic Speech Proficiency of kindergarten children who have been exposed to 17 weeks of SAREP are matched several months later in the first grade by children who have had no SAREP training at all.

4. That in 17 weeks SAREP does not help reading-readiness.

Two other conclusions--less firm because they are based on small samples--are suggested by the study:

1. That in 17 weeks SAREP improves the General and Phonemic Speech Proficiency of kindergarten children more than speech therapy does.

2. That in 17 weeks SAREP improves the General and Phonemic Speech Proficiency of kindergarten children from low socio-economic backgrounds even more than it helps the proficiency of other children.

The study suggests that the major contribution of SAREP to kindergarten children is to speed up speech development that would take place more slowly without SAREP. Most children, it appears, would attain the same level of speech proficiency without SAREP, but not as early in their lives.

What pervades the data is the evidence of a maturational pattern in which children move at different rates of speed to approximately the same level of speech proficiency. Within this pattern, most speech deviations appear to be the symptoms of a slower rate of development rather than the signs of incapacity to attain normal speech proficiency later on.

SAREP appears to have its primary effect on children moving within the pattern. It probably has little effect, if any, on children outside the pattern, whose deviations are not due to slow development, but to psychological or physiological difficulties. This may be true of speech therapy as well.

Implications for Kindergarten Teaching

The major question for kindergarten teaching is whether SAREP is worth including in the curriculum. It clearly speeds up the development of speech, but is such a speedup worth the effort when the same level of proficiency can be attained a few months later without SAREP?

The case for the use of SAREP rests on the following points:

1. By speeding up speech development, SAREP would eliminate some speech deviations at an early stage which might be referred to speech therapists if the deviations were still conspicuous at the end of the kindergarten year.

2. By thus keeping some children out of speech therapy who don't need it, SAREP would spare them from the stigma of being singled out from their classmates--a stigma discussed in Chapter I.

3. By keeping some children out of speech therapy who don't need it, SAREP would free the time of speech therapists for children who do need speech therapy.

4. By eliminating some speech deviations at an early stage, SAREP would tend to ease the anxiety of parents who might otherwise pressure their children about their speech and thereby, perhaps, cause more serious speech difficulties.

5. By making kindergarten teachers more conscious of speech, SAREP would tend to make them better speech models for their children.

6. By speeding up the speech development of children capable of responding to the indirect classroom approach, SAREP might serve

as a screening device to help determine which children need individual speech therapy in the first grade.

7. Because SAREP is a simple and enjoyable activity for children and teachers, requiring little time and effort and no additional funds or personnel, it is worth undertaking even if the benefits are small.

SAREP might prove most effective if it were used in a flexible way to add enjoyment to the classroom by teachers willing to develop some of their own exercises and games. Where SAREP is too structured or where it becomes a burden to children or teachers, SAREP is probably not worth including in the curriculum.

Implications for Speech Therapy

The maturational pattern emerging from the data suggests that a large number of the speech deviations of kindergarten children will be corrected naturally by the time the children finish the first grade. Most speech therapists are already aware of this and are careful about accepting kindergarten children for speech therapy.

In the light of this research, a case could be made for excluding kindergarten children from therapy altogether. At the very least, therapy ought to be withheld unless the speech deviations are extremely serious and unless there is sound reason to conclude that the deviations have psychological or physiological origins and are not merely due to slow maturation.

Where SAREP training is undertaken in kindergartens, it would probably be well for speech therapists not to work with kindergarten children, except in a few unusual cases. In the sample analyzed in this study, 17 weeks of SAREP helped the speech of kindergarten children more than 17 weeks of speech therapy, in any case.

At the same time, the study suggests that some subjects with serious speech deviations did not respond to SAREP at all. Some subjects with serious deviations appear to need help, not so much with the techniques of forming sounds, as with the emotional problems that interfere with the development of normal speech. Speech therapists--among others--can sometimes provide this help.

Implications for Further Research

Results of the present research investigation generally verify that the SAREP method of teaching young children how to form sounds with the oral mechanism at the same time they are being taught letters and sounds in the reading-readiness program is an effective way to teach young children how to speak better. However, since the results are limited by the design of the present study and since they leave a number of unanswered questions, further study of SAREP effects should be useful. Investigators interested in research in teaching young children how to speak better may want to seek answers to questions like these:

1. Would results be similar to those of the present study if SAREP training were conducted in the classroom over a longer period of time? And, would results be similar if SAREP training started earlier?

2. Can the special benefits of SAREP found in this study for children of a poor socio-economic background be verified with a larger sample?

3. Can the finding that SAREP is more effective for kindergarten children than speech therapy be verified with a larger sample?

4. Can SAREP benefit the speech of mentally-retarded children?

5. Can measuring devices be developed to determine which speech deviations will improve through maturation and which will not?

6. Is SAREP itself a measure of maturational speech potential, in that children who do not improve during 17 weeks of SAREP may thereby be identifying themselves as incapable of speech proficiency through maturation?

A more refined analysis of the data in the present study might contribute toward some of the answers. Such an analysis is contemplated for the next two years.

APPENDIX A

Speech and Reading Enrichment Program

M A N U A L

by

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MANUAL

Speech and Reading Enrichment Program

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Speech and Reading Enrichment Program

Introduction

The aim of the Speech and Reading Enrichment Program (SAREP) is the improvement of speech and reading in the public schools. The particular method employed is that of teaching children how selected sounds are made with the articulators. The main characteristic of SAREP is the association of sounds with images done by the classroom teacher within the reading-phonics lesson.

The twelve sounds listed in this manual constitute SAREP. Each sound is given a name, such as "snake" or "rocket," not as an accurate illustration of the sounds, but rather as a teaching device.

Each SAREP lesson is designed to take not more than five to ten minutes of classroom time. The lessons are cumulative in nature. The program is planned to be completed in one school semester.

Many lesson activities are repeated within the semester, and are so marked. Teachers are asked to refer to the original lesson for details on proper procedure with repeated lessons.

Several suggestions for teachers using SAREP are:

1. SAREP is a total class activity. Do not single out any child who may be mispronouncing a sound or word. Be prepared to handle tactfully student criticism directed toward those children not making sounds correctly. The teacher might say, briefly, "We are all practicing these sounds. We'll all get better as we practice more."
2. If the association of SAREP sound to reading-lesson pictures or words is not appropriate to a particular class situation, it is suggested that the individual teacher select other pictures or words to use with the sound from her reading book or workbook.
3. Place a small mirror on the book table for children to use in individual practice.
4. Prepare and have available in the classroom appropriate objects to use for the Auditory Discrimination lessons (see page
5. If the children are responding enthusiastically, teachers should feel free to repeat any exercise on any day.
6. If children offer a word beginning with a blend when additional words are asked for in any lesson, the teacher should accept these and not discuss the difference between the blend and the single sound.

All the sound lessons emphasize the sounds in words rather than in isolation because a sound said in isolation is not the same as a sound said in a word or phrase.

It is hoped that teachers will find SAREP convenient, helpful and stimulating to themselves and to the children. Questions, suggestions and criticisms from teachers are solicited by the SAREP researchers as this is a pilot project and changes are anticipated.

UNIT I.

M - The MOUTH Sound

January 13-17, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: mop, mouse, monkey, matches, moon, mittens, etc. They all start with the 'm' sound. I like to call the 'm' sound the MOUTH Sound because that's how we make it, with the lips of our mouth. Listen and watch my mouth as I make the 'm' sound. (Teacher holds her hand under her mouth to focus attention on the area of her face.) Now, let's all make the MOUTH Sound together. Remember, keep your lips together and say MOUTH. (MOUTH said in unison.) That was very good, boys and girls."

(Teacher is advised to emphasize the initial sound in the key word. For example, in the word MOUTH, the teacher stresses the initial "m" as a learning technique. The teacher should stress the initial sound in the key words throughout the SAREP units.)

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a name to a sound. Do you remember what that name was and what the sound was? That's right -- it was the MOUTH Sound. Let's all make the MOUTH Sound together. Remember, keep your lips together and say MOUTH. (MOUTH said in unison) You were certainly good at that MOUTH Sound, girls and boys. I have put a mirror on the book table for you to look at yourselves and practice the MOUTH Sound if you want to. You may use it later when you have some free time."

Lesson 3. Wednesday Auditory Discrimination Game

"Boys and girls, you remember that we have been learning how to make a good MOUTH Sound? Let's all make the MOUTH Sound together. Remember, keep your lips together and say 'MOUTH.' That was fine. Now today I thought we could play a game with the MOUTH Sound. I'm going to point to some things around our schoolroom that start with the MOUTH Sound and you are to name the things, making a good MOUTH Sound." Teacher points to milk carton, mirror, money, matches, mittens, and joins the children in naming the objects while emphasizing the beginning "m" sound of each word.

"Now I'm going to change the game a little. I'm going to point to some things that start with the MOUTH Sound as I did before but some of the things I point to will not start with the MOUTH Sound. If the things do not start with the MOUTH Sound, do not say anything. Be good watchers and good listeners and don't let me trick you."

Teacher points to objects around the room and the children are encouraged to give the appropriate answer. For example: milk carton (children respond), money (children respond), window (children do not respond), mirror (children respond), book (children do not respond) etc. Teacher is urged to spend time establishing this Auditory Discrimination Game as it will be used repeatedly throughout the semester. N.B. It is helpful to anticipate the use of the Auditory Discrimination Game and have objects placed around the room to be used during the game.

Lesson 4. Thursday Naming Names Game

"Today, boys and girls, I thought we could play a naming game with our MOUTH Sound. You remember how to make the MOUTH Sound, don't you? Let's say it once together. Remember, keep your lips together and say 'MOUTH.' Very good. Now we can play the Naming Names Game. Let's look around the room and say the names of all the boys and girls whose names start with the MOUTH Sound. Remember, when we say the names, to make them start with good MOUTH Sounds."

The children say the names in unison with the teacher who helps them by emphasizing the "m" in the names (Mary, Margaret, Mike, etc.) The teacher should be prepared with additional "m" names to add to the game by saying, "Let's think of some other 'm' names of boys and girls who are not in our class." Suggested names are: Melissa, Monroe, Mandy, Mark, Martin, Murray, Mabel, Martha, Mildred, Monica, Muriel.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the MOUTH Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer by saying a word which begins with the MOUTH Sound. You could name a name that starts with the MOUTH Sound, like Mike or Mary, or you could name some other word that starts with the MOUTH Sound, like Mama. If you can't think of a word, here are some MOUTH Sound objects on my desk that you could name.

"Remember to keep your lips together and make a good MOUTH Sound. Let's all say 'MOUTH' together once." (MOUTH said in unison.) "That's good. Now I'll call your names and you can each answer with a MOUTH Sound word."

N.B. The appropriate objects from the Auditory Discrimination Game should be on the teacher's deak in readiness as an aid for the children.

UNIT II.

D - The DING-DONG Sound

January 20-24, 1964

Lesson 1. Monday

"Today, boys and girls, in our reading workbooks we had some pictures that all start with the same sound. The pictures were: desk, dog, door, duck, deer, doughnut, etc. They all start with the 'd' sound. I like to call the 'd' sound the DING-DONG Sound because that's how we make it -- with our tongues going up to the top of our mouths and then down, just like a bell ringing. Listen and watch while I make the DING-DONG Sound." (Teacher says "DING-DONG: DING-DONG.") "Now let's all say 'DING-DONG' together. Remember, make your tongues go up and down just like a bell ringing as you say 'DING-DONG.'" (DING-DONG, DING-DONG said in unison.) "That was very good; you're good bell ringers."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the DING-DONG Sound and we made it by letting our tongues go to the top of our mouths and then down, just like a bell ringing. Let's all say the DING-DONG Sound together now. Remember, let your tongue go up to the top of your mouth and then down, just like a bell ringing. (DING-DONG; DING-DONG said in unison.) "That was very nice. Those of you who want to can use the mirror later to watch and practice the DING-DONG Sound. The mirror is on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with DING-DONG Sound. Teacher points to: desk, door, blackboard, dress, eraser, pencil, etc.

as the children give the appropriate answer. Teacher first reminds children, "Remember, let your tongue go up to the top of your mouth and come down when you use the DING-DONG Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "d" words.

Lesson 4. Thursday

"Boys and girls, today I thought we'd have some more fun with our new sound, the DING-DONG Sound. Let's all say the DING-DONG Sound once together. Remember, let your tongue go up to the top of your mouth and come down as you say 'DING-DONG.' That was very nice.

"Now, let's all pretend we're bells today and we can 'ring' ourselves by swinging our arms back and forth as we make the DING-DONG Sound. Remember, let your tongue go up to the top of your mouth and come down as you ring your bell. Let's all ring our DING-DONG bells together while swinging our arms and saying 'DING-DONG; DING-DONG; DING-DONG.'"

Teacher joins children swinging her arms up in front and down in back while saying "DING-DONG" and emphasizing the beginning "d" sound.

Lesson 5. Friday

Naming Names Game (see page 81) with DING-DONG Sound names of children: Doris, Dan, David, Debbie, etc. Teacher helps to emphasize the beginning "d" of the names and also reminds the children to make good DING-DONG Sounds by letting their tongues go up to the top of their mouths and come down as they say "DING-DONG."

Other suggested names might be: Dorothy, Douglas, Dexter, Dick, Dominic, Dwight, Diane, Daphne.

UNIT III.

F - The FIGHTING CAT Sound

January 27-31, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: fish, fence, feather, fork, fox, etc. They all start with the 'f' sound. I like to call the 'f' sound the FIGHTING CAT Sound because that's what I think it sounds like -- just like a fighting cat -- f-f-f-f-f. Listen and watch my mouth as I make the FIGHTING CAT Sound. (f-f-f-f-f-f-f) I bite my lower lip gently with my teeth and blow out at the same time." (f-f-f-f; teacher holds hands under mouth for focus.) "Now, let's all be fighting cats together. Remember, bite your lower lip gently with your teeth and blow out at the same time. (FIGHTING CAT) That was very good. My, we have a lot of fighting cats in our room today."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the FIGHTING CAT Sound and we made it by biting our lower lips gently with our teeth and blowing out at the same time. Let's all make our FIGHTING CAT Sound together now. Remember, bite your lower lip gently with your teeth and blow out at the same time. (FIGHTING CAT) Now you sound just like fighting cats. If you want to see what you look like when you are a fighting cat, you can use the mirror at the book table later."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with FIGHTING CAT Sound. Teacher points to: fingers, four, fork, pencil, desk, floor, etc. as the children give the appropriate answer. Teacher first reminds children, "Remember, bite your lower lip gently with your teeth and blow out at the same time when you make the F̲IGHTING CAT Sound. Let's all say it together once." (F̲IGHTING CAT.) Teacher joins in the appropriate response and in emphasizing the beginning sound of the "f" words.

Lesson 4. Thursday

Naming Names Game (see page 81) with F̲IGHTING CAT Sound names of children: Florence, Fred, Fay, Faith, etc. Teacher helps to emphasize the beginning "f" of the names, and also reminds the children to make good F̲IGHTING CAT Sounds by biting their lower lips gently with their teeth and blowing out at the same time. Other suggested names might be: Flora, Frances, Frieda, Frank, Floyd, Felix, Franklin.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of everyday talking about the F̲IGHTING CAT Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the F̲IGHTING CAT Sound. Remember to bite your lower lip gently with your teeth and blow out at the same time. Let's all say 'F̲IGHTING CAT' together once. That's good. Now I'll call your names and you can each answer by saying a word beginning with the F̲IGHTING CAT Sound."

UNIT IV.

G - The GULPING FROG Sound

February 3-7, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: girl, goat, gun, gum, garden, etc. They all start with the 'g' sound. I like to call the 'g' sound the GULPING FROG Sound because a frog makes that sound when he calls 'g-g-g-g.' You can even feel the frog jumping in your throat as you say his 'g-g-g-g' sound. Put your hands on your throats and feel the frog jump as we all say the GULPING FROG Sound together." (GULPING FROG) Teacher joins children in feeling for and saying "GULPING FROG" as she helps them emphasize the "g" sounds.

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the GULPING FROG Sound and we could feel the frog jumping in our throats as we made the GULPING FROG Sound. Let's all make our GULPING FROG Sound together now. Remember, feel for your frog jumping in your throat as you say 'GULPING FROG.' (GULPING FROG) There are certainly a lot of gulping frogs jumping around in our school room today. If you want to watch yourself make the GULPING FROG Sound, you may use the mirror on the book table."

Lesson 3. Wednesday

"Boys and girls, today I thought we could have some more fun with our new sound, the GULPING FROG Sound. Let's all say the GULPING FROG Sound together. Remember to feel for your frog jumping in your throat as you say 'GULPING FROG.' (GULPING FROG) You are certainly good

GULPING FROG makers today.

"Now, let's all pretend we are frogs. We can jump around the schoolroom and say our GULPING FROG Sound as we jump. Remember to make a good GULPING FROG Sound so you can feel the frog jumping in your throat."

Teacher and children jump around room while saying "GULPING FROG." Teacher emphasizes the "g" sound.

Lesson 4. Thursday

Naming Names Game (see page 81) with GULPING FROG Sound names of children: Gertrude, Glenn, Grace, Gloria, Gary, etc. Teacher helps to emphasize the beginning "g" of the names, and also reminds the children to make good GULPING FROG Sounds so they can feel the frogs jumping in their throats. Other suggested names might be: Gilbert, Gifford, Gordon, Guy, Grover, Gretchen, Gail, Gladys, Greta.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the GULPING FROG Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the GULPING FROG Sound. Remember to make a good GULPING FROG Sound so you can feel the frog jumping in your throat. Let's all make the GULPING FROG Sound together once. (GULPING FROG) That's good. Now I'll call your names and you can each answer by saying a word beginning with the GULPING FROG Sound."

UNIT V.

B - The BUBBLE Sound

February 10-14, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: bear, bat, buttons, ball, etc. They all start with the 'b' sound. I like to call the 'b' sound the BUBBLE Sound because when you say 'bubble' you make two bubble sounds in the word. You all know about bubble gum and bubble bath. Those words have lots of BUBBLE Sounds in them. Listen and watch my mouth (teacher holds hand under her mouth for focus) as I make the BUBBLE Sound. I press my lips together and then blow out while I say 'BUBBLE.' Now, let's all say 'BUBBLE' together. Remember to press your lips together and then blow out." (BUBBLE) "That was very good, girls and boys. You are certainly fine BUBBLE Sound makers."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the BUBBLE Sound and we made it by pressing our lips together and blowing out. Let's all make our BUBBLE Sound together now. Remember, press your lips together and blow out while you say 'BUBBLE.' (BUBBLE) That was just fine. If you want to see yourself saying the BUBBLE Sound, you can use the mirror on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with BUBBLE Sound. Teacher points to: book, button, blackboard, ball, desk, window, ruler, etc. as the children give the appropriate answer. Teacher first reminds children, "Remember to press your lips together and blow out when you use the BUBBLE Sound." Teacher joins in making the appropriate responses and in emphasizing the beginning sound of the "b" words.

Lesson 4. Thursday

Naming Names Game (see page 81) with BUBBLE Sound names of children: Barbara, Barry, Bill, Betty, Brenda, Bert, Bobby, etc. Teacher helps to emphasize the beginning "b" of the names and also reminds the children to make good BUBBLE Sounds by pressing their lips together and blowing out. Other suggested names might be: Beatrice, Bertha, Ben, Belinda, Bridget, Bruce, Brian.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the BUBBLE Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the BUBBLE Sound. Remember to press your lips together and blow out. Let's all say 'BUBBLE' together once. (BUBBLE) That's good. Now I'll call your names and you can each answer by saying a word be-inning with the BUBBLE Sound."

UNIT VI.

S - The SNAKE Sound

February 17-28, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: seal, sun, sandwich, socks, soap, sink, etc. They all start with the 's' sound. I like to call the 's' sound the SNAKE Sound. Now a snake must be kept in his cage as we don't want him to get away. The cage bars are our teeth and we must keep the cage bars locked so our snake, our tongue, can't get out. Watch how I make my SNAKE Sound and listen to him hiss (SNAKE) Let's all try making good SNAKE Sounds. Remember, keep your cage bars locked. Don't let your snakes get out! (SNAKE) That was very good. You are good snake-keepers."

Lesson 2. Tuesday

"Girls and boys, remember yesterday we learned about the SNAKE Sound and how we have to be good snake-keepers by locking our cage bars (points to her teeth)? Do you suppose we have all remembered about keeping the bars locked? Watch me be a good snake-keeper and listen to my snake hiss (s-s-s-SNAKE). Now, let's see if you have remembered how to be good snake-keepers. Don't forget to keep your cage bars locked so your snake won't get away. (SNAKE) That was very good, girls and boys. I can tell that you are learning to be good snake-keepers now.

"Some of you may want to see what good snake-keepers you are becoming. You can use the mirror on the book table to watch while you make the SNAKE Sound. Practice hard so your snakes can't get out of the cage bars."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with SNAKE Sound. Teacher points to various objects around the room starting with "s" and also points to objects starting with other sounds. It is suggested that the objects other than "s" be things starting with "th." (The "th" is suggested because the usual sound substitution in a speech disorder of the "s" is the "th".) Some objects might be: sink, straw, throat, thumb, star, soap, thermos bottle, thimble, thread, thermometer, snake, seal, sandwich. Children give the appropriate answer after the teacher reminds them. "Remember, keep your cage bars locked so your snakes can't get away when you use the SNAKE Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "s" words.

Lesson 4. Thursday

"Girls and boys, today I thought we'd have some more fun with our new sound, the SNAKE Sound. Let's all pretend we're snakes. We can all stand up and wriggle around while we make our SNAKE Sounds. Remember now, keep those cage bars locked (points to her teeth) so your snakes can't get away." Teacher joins children wriggling and saying SNAKE and emphasizing the beginning "s."

Lesson 5. Friday

Naming Names Game (see page 81) with SNAKE Sound names of children: Sarah, Sam,Steve, Susie, Stuart, Sally, etc. Teacher helps to emphasize the beginning "s" of the names and also reminds the children to make good SNAKE Sounds by keeping their snakes locked in their cages. Other suggested names might be: Seth, Sidney, Saul, Sabina, Sylvia, Stella, Sybil.

Lesson 6. Monday (February 24)

"Last week, boys and girls, we learned a new sound. That's right, it was the SNAKE Sound. We were learning to be good snake-keepers and to keep our snake, our tongue, locked in behind the cage bars (points to her teeth) so the snake can't get out and become an 'angry goose' (th-th-th). Let's say 'SNAKE' together now and remember, keep your cage bars locked so your snakes can't get away. (SNAKE) My, you are all getting to be good snake-keepers.

"Don't forget that the mirror on the book table is a good place to watch your snakes staying in behind their cage bars."

Lesson 7. Tuesday

"Today, boys and girls, I thought it might be fun to learn a little poem about a snake. You remember how to make our SNAKE Sound, don't you? Let's all say 'SNAKE' together and remember to keep your snakes locked in their cages so they can't get away. (SNAKE) That's fine. Now when you are learning to say the poem today, remember how we make a good SNAKE Sound, be good snake-keepers and don't let your snakes get out of their cages.

"Here is the poem:

A silver snake was sleeping
When suddenly he awoke.
s-s-s-s-s
Was the soft little sound he spoke."

Teacher spends the lesson teaching the poem to the class.

Lesson 8. Wednesday

Teacher reviews the poem learned yesterday. She reminds the children, "Be good snake-keepers. Keep your cage bars locked so your snakes can't get away when you use the SNAKE Sound. Let's all say our SNAKE

Sound together once. (SNAKE) Fine. Now, let's make good SNAKE Sounds when we say our snake poem."

Lesson 9. Thursday

"Boys and girls, I thought we could have some more fun with our SNAKE Sound today. How many of you know how to do a snake dance? Well, to do a snake dance we all have to join hands in a big chain and we wriggle and dance around the schoolroom while we say 'SNAKE.' Remember, be good snake-keepers and don't let your snakes get out of their cages when you use the SNAKE Sound."

Teacher joins children in a snake dance around the schoolroom while she emphasizes the "s" in SNAKE.

Lesson 10. Friday Roll Call Game

"Girls and boys, we have spent part of everyday for two weeks talking about the SNAKE Sound. Today let's take roll, and instead of answering 'present' when I call your name, answer it with a word beginning with the SNAKE Sound. Remember, be good snake-keepers and don't let your snakes get out of their cages when you say the word beginning with the SNAKE Sound."

UNIT VII.

T - The TICK-TOCK Sound

March 2-6, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: turtle, tent, tiger, tomato, turkey, towel, etc. They all start with the 't' sound. I like to call the 't' sound the TICK-TOCK Sound because that's how we make it -- with our tongues going up to the top of our mouths and then down. Listen and watch while I make the TICK-TOCK Sound. (Tick-tock; tock-tock) Now let's all say 'Tick-Tock' together. Remember, make your tongue go up and down in your mouth as you say 'Tick-Tock.' That was very good; you are good tick-tock clockers."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the TICK-TOCK Sound and we made it by making our tongues go up and down in our mouths. Let's all say 'Tick-Tock' together now. Remember, make your tongue go up to the top of your mouth and then down as you say 'Tick-Tock.' That was very nice. You are certainly good tick-tock clockers.

"Those of you who want to can use the mirror later to watch and practice the TICK-TOCK Sound. The mirror is on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with TICK-TOCK Sound. Teacher points to: table, towel, teeth, floor, door, tie, etc. as the children give the appropriate answer. Teacher first reminds children, "Remember, make your tongue go up to the top of your mouth and then down as you use the T̲ICK-T̲OCK Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "t" words.

Lesson 4. Thursday

"Boys and girls, today I thought we'd have some more fun with our new sound, the T̲ICK-T̲OCK Sound. Let's all pretend we are big grandfather clocks. We can stand, swing our arms from side to side like a big grandfather clock swings its pendulum, and say 'tick-tock; tick-tock.' Remember, make your tongue go up to the top of your mouth and then down as you swing your arms and say 'tick-tock; tick-tock.'"

Teacher joins children swinging her arms from right to left while saying "tick-tock" and emphasizing the beginning "t" sound.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the T̲ICK-T̲OCK Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the T̲ICK-T̲OCK Sound. Remember to make your tongue go up to the top of your mouth and then down as you say 'tick-tock.' Let's all say 'tick-tock' together once. That's good. Now I'll call your names and you can each answer by saying a word beginning with the T̲ICK-T̲OCK Sound."

UNIT VIII.

Review Week

March 9-13, 1964

Lesson 1. Monday Review MOUTH Sound and BUBBLE Sound

"Boys and girls, this week we are going to have a Review Week of all the sounds we have learned thus far. A Review Week is a week in which we go over things we have learned before. Today we are going to review two sounds, the MOUTH Sound and the BUBBLE Sound.

"Do you remember how we made the MOUTH Sound? Good. Let's all make the MOUTH Sound together now. Remember, keep your lips together and say MOUTH. That was fine.

"Now let's see if you remember how to make the BUBBLE Sound. You do? Good. Let's all make the BUBBLE Sound together and remember to press your lips together and then blow out as you say 'BUBBLE.' Well, you certainly remembered how to be good bubble-makers. And I hope you all noticed that the MOUTH Sound and the BUBBLE Sound both make our lips come together, don't they?"

Lesson 2. Tuesday Review DING-DONG Sound and TICK-TOCK Sound

"Today, boys and girls, we are going to review the DING-DONG Sound and the TICK-TOCK Sound.

"Do you remember how we made the DING-DONG Sound? Good. Let's all make the DING-DONG Sound together. Remember, make your tongue go up and down just like a bell ringing as you say 'DING-DONG." That was very good. You are certainly good bell-ringers. Now, let's see if you remember how to make the TICK-TOCK Sound. You do? Good. Let's all make the TICK-TOCK Sound together and remember to make your tongue go up to the top of your mouth and then down as you say TICK-TOCK. Well, you are good tick-tock clockers.

"And, boys and girls, I hope you all noticed that the DING-DONG Sound and the TICK-TOCK Sound both make our tongues go up and down in our mouths, don't they?"

Lesson 3. Wednesday Review of FIGHTING CAT Sound

"Today, boys and girls, we are going to review the FIGHTING CAT Sound. Remember, we made the FIGHTING CAT Sound by biting our lower lips gently with our teeth and blowing out at the same time. Let's all make the FIGHTING CAT Sound together. (FIGHTING CAT) What a lot of fighting cats we have in our room today!"

Lesson 4. Thursday Review of GULPING FROG Sound

"Today, girls and boys, we are going to review the GULPING FROG Sound. Remember, we made the GULPING FROG Sound by feeling for our frogs jumping in our throats. Let's all say 'GULPING FROG' together. (GULPING FROG) Good. Now we can pretend we are all gulping frogs. We can jump around the schoolroom and say our GULPING FROG Sound as we jump. Remember to make a good GULPING FROG Sound so you can feel the frog jumping in your throat."

Teacher and children jump around the room while saying "GULPING FROG." Teacher emphasizes the "g" sound.

Lesson 5. Friday Review of SNAKE Sound

"Today, boys and girls, we are going to review the SNAKE Sound. Remember, we made the SNAKE Sound by keeping our tongues locked in behind our teeth. Let's all make the SNAKE Sound together now. (SNAKE) My, you are good snake-keepers. Now I thought it would be fun to say our Snake poem. How many of you remember it? When we say it, remember to be good snake-keepers and keep your snakes locked in behind those cage bars so the snakes can't get away. Are you ready?

A silver snake was sleeping
When suddenly he awoke
s-s-s-s
Was the soft little sound he spoke."

Teacher joins in saying the poem and emphasizing the beginning of the "s" words.

UNIT IX.

P - The POPCORN Sound

March 16-20, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: pigeon, pear, pig, pajamas, policeman, piano, etc. They all start with the 'p' sound. I like to call the 'p' sound the POPCORN Sound because that's just what it sounds like when you make the sound and that's the sound popcorn makes when it pops. We make the POPCORN Sound by putting our lips together and then letting them 'pop' apart just the way the popcorn pops open when it cooks. Listen and watch my mouth (teacher holds hand under her mouth for focus) as I say 'POPCORN.' Now let's all say 'POPCORN' together. Remember to put your lips together and then let them pop apart. (POPCORN) That was very good, boys and girls. You are wonderful popcorn makers."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the POPCORN Sound and we made it by putting our lips together and then letting them 'pop' apart. Let's all make our POPCORN Sound together now. Remember, put your lips together and then let them 'pop' apart while you say 'POPCORN.' (POPCORN) That was just fine. If you want to see yourself popping the POPCORN Sound, you can use the mirror on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with POPCORN Sound. Teacher points to: pencil, book, paper, chair, pen, desk, pin, etc.

as the children give the appropriate answer. Teacher first reminds children, "Remember to put your lips together and then let them 'pop' apart when you use the POPCORN Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "p" words.

Lesson 4. Thursday

"Boys and girls, today I thought we could have some more fun with our POPCORN Sound. Let's all pretend we are a popcorn machine. We can 'pop' up the way popcorn does in a popcorn machine and say our POPCORN Sound as we jump. Remember to put your lips together and 'pop' them apart when you say 'POPCORN.'"

Teacher instructs children to crouch down and when she says "Pop" to jump up and shout "POPCORN." Teacher helps by emphasizing the beginning "p" sound.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the POPCORN Sound. Today let's take roll, and instead of answering 'present' when I call your name, answer with a word beginning with the POPCORN Sound. Remember to put your lips together and 'pop' them apart when you say 'POPCORN.' Let's all make the POPCORN Sound together once. (POPCORN) What good popcorn makers you are! Now I'll call your names and you can each answer by saying a word beginning with the POPCORN Sound."

UNIT X.

K - The COUGHING Sound

March 23-27, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: key, corn, carrots, kangaroo, cake, etc. They all start with the 'k' sound. I like to call the 'k' sound the COUGHING Sound because when we make the sound in our throats, it is just like a little cough. You can feel the COUGHING Sound just like you could feel which sound that we had, boys and girls? That's right -- just like you could feel the GULPING FROG Sound. Now let's all say 'COUGHING' together. (COUGHING) Did you all feel the little cough? Good."

Lesson 2. Tuesday

"Yesterday, boys and girls, we gave a new name to a sound. That's right, it was the COUGHING Sound and we could feel our throats making a little cough as we said the sound. Let's all make our COUGHING Sound together now. Remember, put your hand on your throat so you can feel the little cough while you say 'COUGHING.' (COUGHING) That was just fine. If you want to watch yourself making the COUGHING Sound, you can use the mirror on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with COUGHING Sound. Teacher points to: key, coat, pen, pencil, window, calendar, kite, cabinet, cookie, etc. as the children give the appropriate answer. Teacher first reminds children, "Remember to feel the little cough in your throat when you use the COUGHING Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "c" and "k" words.

Lesson 4. Thursday

Naming Names Game with COUGHING Sound names of children: Ken, Kathy, Karen, Curt, Carl, etc. Teacher helps to emphasize the beginning "c" and "k" of the names and also reminds the children to make good COUGHING Sounds by feeling the little cough in their throats. Other suggested names might be: Keith, Kathleen, Kit, Kathrina, Kevin.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of everyday talking about the COUGHING Sound. Today let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the COUGHING Sound. Remember to make a good COUGHING Sound so you can feel the little cough in your throat. Let's all say 'COUGHING' together once. (COUGHING) That was fine. Now I'll call your names and you can each answer by saying a word beginning with the COUGHING Sound."

UNIT XI.

J - The JUMPING JACK Sound

March 25-April 6, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: jar, jacket, jug, jungle gym, etc. They all start with the 'j' sound. I like to call the 'j' sound the JUMPING JACK Sound because when you say 'JUMPING JACK' you make two JUMPING JACK Sounds and you can feel them jumping by touching your jaw. Let's all say 'JUMPING JACK' together; remember to put your teeth together and feel the jumping by touching your jaw. (JUMPING JACK) That was very good, girls and boys. You made fine jumping jacks."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the JUMPING JACK Sound and we could feel our jaws jumping as we kept our teeth together and made the JUMPING JACK Sound. Let's all make the JUMPING JACK Sound together now. Remember, keep your teeth together and make the little jumping sound with your jaw. (JUMPING JACK) That was fine. If you want to watch yourself making the JUMPING JACK Sound, you can use the mirror on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with JUMPING JACK Sound. Teacher points to: jacket, jar, door, desk, floor, jelly jar, etc. as the children give the appropriate answer. Teacher first reminds children, "Remember to keep your teeth together and make the little jumping sound with your jaw when you use the JUMPING JACK Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "j" words.

Lesson 4. Thursday

"Boys and girls, today I thought we could have some more fun with our new sound, the JUMPING JACK Sound. You remember how to make the JUMPING JACK Sound, don't you? Let's all say 'JUMPING JACK' once together and remember, keep your teeth together and make the little jumping sound with your jaw as you say 'JUMPING JACK.' (JUMPING JACK) Fine. Now, let's pretend we are jumping jacks. Crouch down on the floor in your 'boxes' and listen to the story I'm going to tell. Listen carefully and do what the story tells you to do. When I clap my hands, all you jumping jacks will jump up out of your boxes and shout 'JUMPING JACK.' Remember to keep your teeth together and make the little jumping sound with your jaw. All right now, are you ready?

"Down in the box there lives a little man.
He waits and he waits as quiet as he can
Until I open the lid.
CLAP. CLAP."

Children all jump up shouting "JUMPING JACK" when the teacher claps. Teacher joins children in saying "JUMPING JACK" and emphasizing the beginning "j" sounds.

Lesson 5. Friday Roll Call Game

"This week, girls and boys, we have spent part of every day talking about the JUMPING JACK Sound. Today let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the JUMPING JACK Sound. Remember to keep your teeth together and make the little jumping sound with your jaw. Let's all make the JUMPING JACK Sound together once. (JUMPING JACK) That was fine. Now

I'll call your names and you can each answer by saying a word beginning with the JUMPING JACK Sound."

UNIT XII.

L - The LOLLIPOP Sound

April 13-24, 1964

Lesson 1. Monday

"Boys and girls, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: light, lion, letter, ladder, leaf, etc. They all start with the 'l' sound. I like to call the 'l' sound the LOLLIPOP Sound because we can pretend we are licking a lollipop when we raise our tongues to the top of our mouths as we make the LOLLIPOP Sound. Listen and watch my mouth (teacher holds hand under her mouth for focus) as I say 'LOLLIPOP.' Now let's all say 'LOLLIPOP' together. Remember to lift your tongue to the top of your mouth just behind your teeth. (LOLLIPOP) You are certainly good lollipop lickers."

Lesson 2. Tuesday

"Yesterday, girls and boys, we gave a new name to a sound. That's right, it was the LOLLIPOP Sound and we made it by lifting our tongues to the top of our mouths just behind our teeth. Let's all make our LOLLIPOP Sound together now. Remember, lift your tongue to the top of your mouth behind your teeth while you say 'LOLLIPOP.' (LOLLIPOP) That was just fine. If you want to see yourself making the LOLLIPOP Sound, you can use the mirror on the book table."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with LOLLIPOP Sound. Teacher points to various objects around the room starting with "l" and also points to objects starting with other sounds. It is suggested that the objects other than "l" be things starting with "w." (The "w" is suggested because the usual sound substitution in a speech disorder of the "l" is the "w.") Some objects might be: light, lemon, window, wastebasket, letter, wall, leaf, etc. Children give the appropriate answer after the teacher reminds them, "Remember, lift your tongue to the top of your mouth behind your teeth when you use the LOLLIPOP Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "l" words.

Lesson 4. Thursday

"Boys and girls, today I thought we could have some more fun with our LOLLIPOP Sound. I know many of you have learned the Looby Loo song before. It has a lot of LOLLIPOP Sounds in it, doesn't it? So, let's remember to lift our tongues to the top of our mouths just behind our teeth whenever we use the LOLLIPOP Sound in the Looby Loo song. We can practice the LOLLIPOP Sound together once before the song. Remember to lift your tongue to the top of your mouth just behind your teeth. (LOLLIPOP) Good. Now we can sing Looby Loo."

Teacher joins the children in singing and acting out Looby Loo and in emphasizing the beginning sound of the "l" words.

Lesson 5. Friday

Naming Names Game (see page 81) with LOLLIPOP Sound names of children: Louise, Louis, Laura, Linda, Lanny, etc. Teacher helps to emphasize the beginning "l" of the names and also reminds the children to make good LOLLIPOP Sounds by lifting their tongues to the top of their mouths just behind their teeth. Other suggested names might be:

Lee, Lester, Lloyd, Luke, Lynn, Lisa, Loretta, Lena, Lucille, Lucy, Lydia.

Lesson 6. Monday (April 20)

"Last week, boys and girls, we learned a new sound which we called the LOLLIPOP Sound. I hope you have all remembered how to make the LOLLIPOP Sound. That's right, you lift your tongue to the top of your mouth just behind your teeth. Let's all say 'LOLLIPOP' together and remember to be good lollipop lickers and lift your tongues. (LOLLIPOP) My, what good lollipop lickers we have today. The mirror is on the book table for those of you who want to watch your tongues saying the LOLLIPOP Sound."

Lesson 7. Tuesday

"Today, boys and girls, I'm going to teach you a new poem that has alot of LOLLIPOP Sounds in it. Remember as you say the poem to be good lollipop lickers and lift your tongues to the top of your mouths just behind your teeth whenever you use the LOLLIPOP Sound. Let's all say 'LOLLIPOP' together once. (LOLLIPOP) Good. Now here is the poem:

" Let's all lick our lollipops.
I think lemon and lime are tops."

Teacher helps children with learning the poem and emphasizing the beginning sound of the "l" words.

Lesson 8. Wednesday

Teacher repeats the Lollipop Poem with the children. First she reminds the children, "Remember to be good lollipop lickers and lift your tongues to the top of your mouths just behind your teeth as you use the LOLLIPOP Sound in the poem. Let's all say the LOLLIPOP Sound together once before we say our poem. (LOLLIPOP) That was just fine.

Now let's say our poem together." Teacher says poem with children and emphasizes beginning sounds of "l" words.

Lesson 9. Thursday

"Today I thought we could play London Bridge because it is fun and because it has a lot of LOLLIPOP Sounds in it. Remember as we play the game to be good lollipop lickers and lift your tongues to the top of your mouths just behind your teeth as you say the LOLLIPOP Sound in the game. Let's all say the LOLLIPOP Sound together once before we start the game. (LOLLIPOP) You are certainly good lollipop lickers. Now we can play London Bridge, and remember to make good LOLLIPOP Sounds." Teacher plays London Bridge with children and emphasizes the beginning sound of the "l" words.

Lesson 10. Friday Roll Call Game

"Boys and girls, for two weeks we have spent part of every day talking about the LOLLIPOP Sound. Today, let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the LOLLIPOP Sound. Remember, lift your tongue to the top of your mouth just behind your teeth when you say 'LOLLIPOP.' Let's all say LOLLIPOP together once. (LOLLIPOP) What good lollipop lickers you are! Now I'll call your names and you can each answer by saying a word beginning with the LOLLIPOP Sound."

UNIT XIII.

R - The ROCKET Sound

April 27 - May 8, 1964

Lesson 1. Monday

"Girls and boys, in our reading workbooks we had some pictures that all start with the same sound. Those pictures were: rabbit, ruler, rake, rainbow, rattle, radio, etc. They all start with the 'r' sound. I like to call the 'r' sound the ROCKET Sound because that's how we make the sound with our mouths and tongues -- just like a rocket being launched.

"The rocket is our tongue and our mouth is the launching pad. We must be good rocketeers and launch our rockets off the rocket pad. Whenever we make the ROCKET Sound, we have to launch our rockets off the pad by lifting the front of our tongue up from the bottom of our mouth.

"Watch and listen how I make the ROCKET Sound. (ROCKET) Now, let's all be good rocketeers and launch our rockets off their launching pads. Remember, lift the front of your tongues as you say 'ROCKET.' (ROCKET) That was fine, girls and boys; you're being good rocketeers."

Lesson 2. Tuesday

"Girls and boys, you remember yesterday we learned about the ROCKET Sound and how we have to be good rocketeers and lift our rockets off their launching pads? Do you suppose we have all remembered about lifting the front of our tongues from the bottom of our mouths? Watch and listen to my ROCKET Sound. (ROCKET) Now let's see if you *have* remembered how to be good rocketeers. Let's all launch our rockets together and say 'ROCKET.' (ROCKET) That was very good, girls and boys. I can tell that you are learning to be good rocketeers now.

"The mirror is on the book table for you to practice being good rocketeers. When you have time, you may go to the table and practice your ROCKET Sounds."

Lesson 3. Wednesday

Auditory Discrimination Game (see page 81) with ROCKET Sound. Teacher points to various objects around the room starting with "r" and also points to objects starting with other sounds. It is suggested that the objects other than "r" be things starting with "w". (The "w" is suggested because the usual sound substitution in a speech disorder of the "r" is the "w".) Some objects might be: ruler, radio, rabbit, window, wall, ring, wastebasket, red, etc. Children give the appropriate answer after the teacher reminds them, "Remember, be good rocketeers and lift the front of your tongues from the bottom of your mouths when you use the ROCKET Sound." Teacher joins in making the appropriate response and in emphasizing the beginning sound of the "r" words.

Lesson 4. Thursday

"Today, boys and girls, I thought we could play a game with our new ROCKET Sounds. You remember how to make the ROCKET Sound, don't you? Let's all make the ROCKET Sound together and remember to lift your tongue from the bottom of your mouth. (ROCKET) You are certainly getting to be good rocketeers.

"Now, let's all pretend we are rockets and are being launched. Let's all crouch down on the floor and I can start the countdown. When I reach zero, we can all jump up and pretend we are blasting off into space. As we blast off, we can make our ROCKET Sound. Remember to lift your tongue from the bottom of your mouth as you say 'ROCKET.'"

Teacher gives the countdown and helps the children emphasize the beginning "r" in the ROCKET Sound.

Lesson 5. Friday

Naming Names Game (see page 81) with ROCKET Sound names of children: Ruth, Robert, Richard, Rebecca, etc. Teacher helps to emphasize the beginning "r" of the names and also reminds the children to be good rocketeers by lifting their tongues from the bottom of their mouths. Other suggested names might be: Rita, Raymond, Reuben, Roger, Rudolph, Roy, Russell, Roland, Rachel, Rosalind, Rhoda.

Lesson 6. Monday (May 4)

"Last week, boys and girls, we learned a new sound which we called the ROCKET Sound. I hope you have all remembered how to be good rocketeers. You have to launch your tongues by lifting them from the bottom of your mouths, don't you? Now let's all say 'ROCKET' together and remember to launch your tongues off their launching pads (which are the bottoms of your mouths, aren't they?) (ROCKET) You certainly are learning to be good rocketeers. The mirror is on the book table for those of you who want to practice saying the ROCKET Sound."

Lesson 7. Tuesday

"Boys and girls, today I thought we could play another game with our ROCKET Sound. Let's all pretend we are rockets that are orbiting in space around the earth. We can all run around the schoolroom as we pretend we are orbiting the earth, and while we run, we can make our ROCKET Sound. You remember how to make the ROCKET Sound, don't you?

Let's say the ROCKET Sound together once; don't forget to lift your tongue from the bottom of your mouth as you say 'ROCKET.' (ROCKET) That was fine, boys and girls. Now we can all pretend we are rockets orbiting around the earth."

Teacher joins the children in orbiting around the room and in emphasizing the beginning "r" in the ROCKET Sound.

Lesson 8. Wednesday

"Boys and girls, today we are going to learn a new poem that is all about rockets and has lots of ROCKET Sounds in it. Remember as you say the poem to be good rocketeers and lift your tongues from the bottom of your mouths whenever you use the ROCKET Sound. Let's all make the ROCKET Sound together. (ROCKET) Good. Now, here is the poem.

Rockets are launched and rockets can rise
Rockets can reach to the moon in the skies."

Teacher helps children with learning the poem and emphasizing the beginning sound of the "r" words.

Lesson 9. Thursday

Teacher repeats the Rocket Poem with the children. First, she reminds the children, "Remember to be good rocketeers and lift your tongues from the bottom of your mouths as you use the ROCKET Sound in the poem. Let's all say the ROCKET Sound together once before we say our poem. (ROCKET) That was just fine. Now let's say our poem together." Teacher says poem with children and emphasizes beginning sounds of the "r" words.

Lesson 10. Friday Roll Call Game

"Boys and girls, for two weeks we have spent part of every day talking about the ROCKET Sound. Today let's take roll and instead of answering 'present' when I call your name, answer with a word beginning with the ROCKET Sound. Remember, lift your tongue from the bottom of your mouth when you say 'ROCKET.' Let's all make the ROCKET Sound together once. (ROCKET) What good rocketeers you are! Now I'll call your names and you can each answer by saying a word beginning with the ROCKET Sound."

UNIT XIV.

Review Week

May 11-15, 1964

Lesson 1. Monday Review POPCORN Sound

"Boys and girls, this is our Review Week of all the sounds we have learned since our last Review Week. A Review Week is a week in which we go over things we have learned before. Today we are going to review the POPCORN Sound. Remember, we made the POPCORN Sound by putting our lips together and then letting them 'pop' apart. Let's all say 'POPCORN' together once. (POPCORN) That was fine. Now let's pretend we are popcorn machines. Crouch down and when I say 'pop' you can all jump up and say 'POPCORN.' Remember, put your lips together and then let them 'pop' apart when you say 'POPCORN.'"

Teacher conducts popcorn machine game and emphasizes the beginning "p" sound.

Lesson 2. Tuesday Review COUGHING Sound

"Today, boys and girls, we are going to review the COUGHING Sound. Remember we made the COUGHING Sound and could feel the little cough in our throats as we made the sound. Put your hands on your throats and feel the little cough as we all say 'COUGHING' together. (COUGHING) Did you feel the little cough in your throats? Good, boys and girls."

Lesson 3. Wednesday Review JUMPING JACK Sound

"Boys and girls, today we are going to review the JUMPING JACK Sound. Remember we made the JUMPING JACK Sound by keeping our teeth together and making the little jumping sound with our jaws. Let's all make the JUMPING JACK Sound together. (JUMPING JACK) Good. Now we can pretend we are jumping jacks. Crouch down on the floor in your 'boxes' and listen to the story I am going to tell. Listen carefully and do what the story tells you to do. When I clap my hands, all you jumping jacks will jump up out of your boxes and shout 'JUMPING JACK.' Remember to keep your teeth together and make the little jumping sound with your jaws. Are you ready?

Down in the box there lives a little man
He waits and he waits as quiet as he can.
Until I open the lid.
CLAP. CLAP."

Children all jump up shouting "JUMPING JACK" when the teacher claps. Teacher joins children in saying "JUMPING JACK" and emphasizing the beginning "j" sound.

Lesson 4. Thursday Review LOLLIPOP Sound

"Today we are going to review the LOLLIPOP Sound. Remember we made the LOLLIPOP Sound by lifting our tongues to the top of our mouths just behind our teeth. Let's all make the LOLLIPOP Sound together. (LOLLIPOP) Good. Now I thought it would be fun to say our Lollipop Poem. How many of you remember it? When we say it, remember to be good lollipop lickers and lift your tongues to the top of your mouths just behind your teeth.

Let's all lick our lollipops.
I think lemon and lime are tops."

Teacher joins the children saying the poem and emphasizing the beginning of the "l" words.

Lesson 5. Friday Review ROCKET Sound

"Today, girls and boys, is our last review lesson, and we are going to review the ROCKET Sound. Remember we made the ROCKET Sound by lifting our tongues from the bottom of our mouths. Let's all say 'ROCKET' together once. (ROCKET) You certainly are good rocketeers. Now let's pretend we are rockets orbiting in space around the earth. We can all run around the schoolroom as we pretend to orbit the earth, and while we run, we can make our ROCKET Sound. Remember to lift your tongue from the bottom of your mouth as you say 'ROCKET.'" Teacher joins the children in orbiting around the room and in emphasizing the beginning "r" in the ROCKET Sound.

APPENDIX B

SAREP Articulation Test

SAREP Rating Sheet

School____________________Subject____________Rating____________Round______
(1, 2, 3)

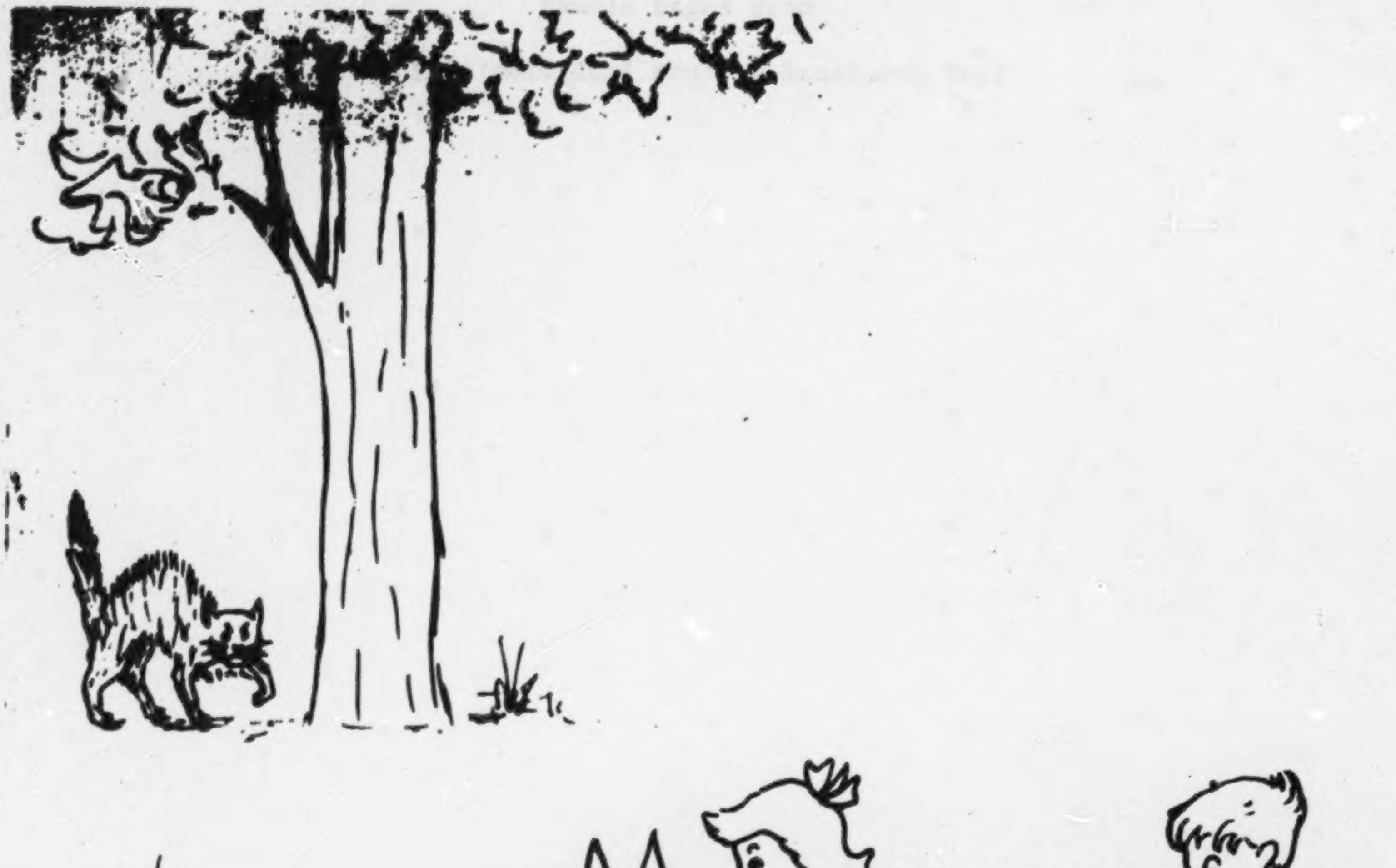
1. SUN
2. WHISTLE
3. MOUSE
4. SLED
5. SQUIRREL
6. ZIPPER
7. SCISSORS
8. NOSE
9. THUMB
10. TOOTHBRUSH
11. TEETH
12. THREAD
13. FEATHER
14. RING
15. FORK
16. CAR
17. TREE
18. ICE CREAM CONE
19. DRUM
20. LAMP
21. BALLOON

22. BALL
23. AIRPLANE
24. CLOCK
25. BLOCKS
26. JACK-IN-THE-BOX
27. FIRE ENGINE
28. ORANGE
29. CHAIR
30. PICTURE
31. CHURCH
32. SHOE
33. WASHING MACHINE
34. FISH
35. KEY
36. CHICKEN
37. MILK
38. GUN
39. WAGON
40. FLAG
41. KNIFE
42. VALENTINE
43. TELEVISION
44. STOVE

Please note not only the key sounds but also other sounds which are omitted, added, distorted, or for which there are substitutions. The following symbols should be used: -x = omitted sound; +x = added sound; -x- = distorted sound; y/x = substituted sound.

APPENDIX C

Connected Discourse Speech Stimulation Test

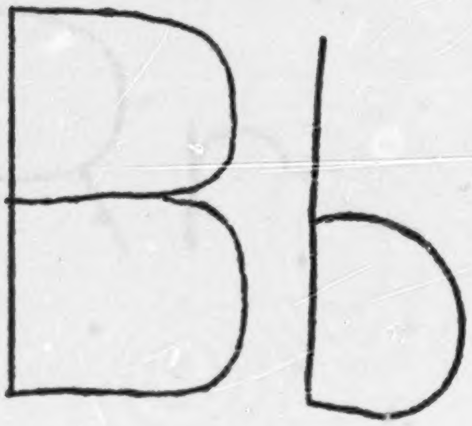


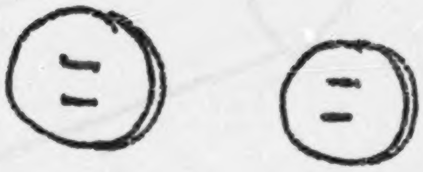
APPENDIX D

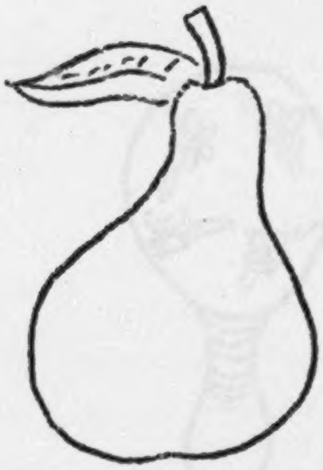
Sample Pages From

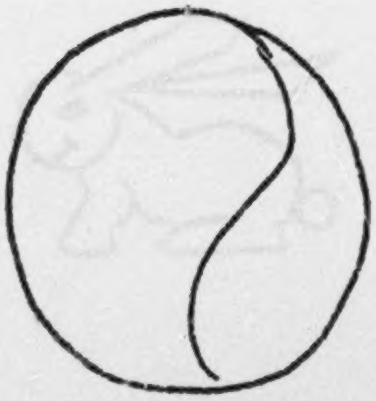
SAREP Individual Reading-Readiness Test

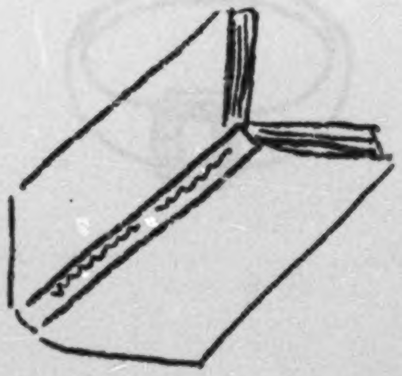
FROM TEST A





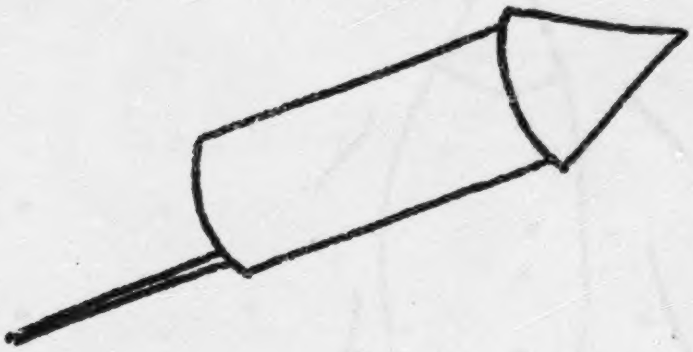


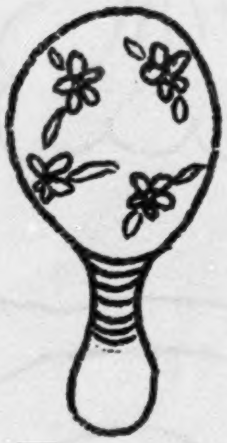


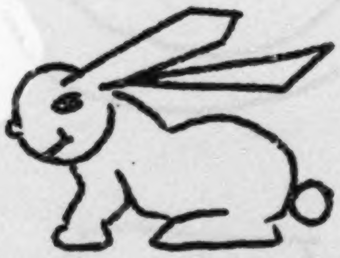


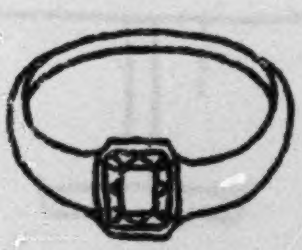
FROM TEST B

Rr

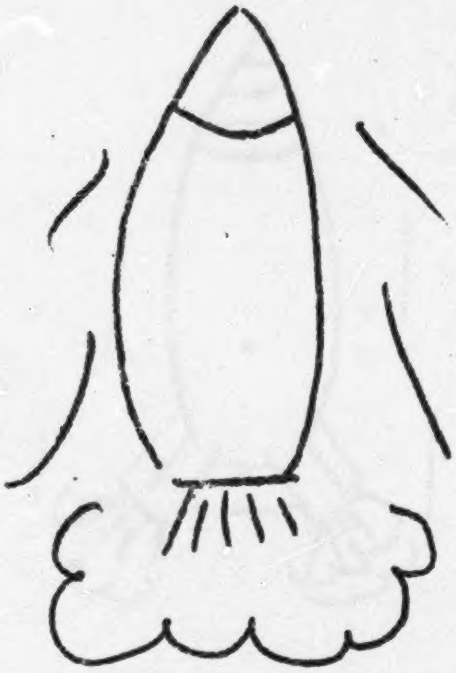


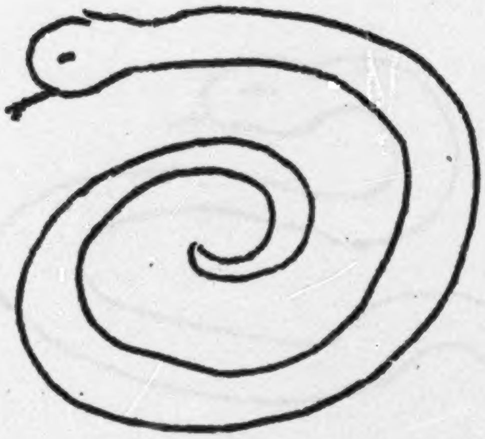


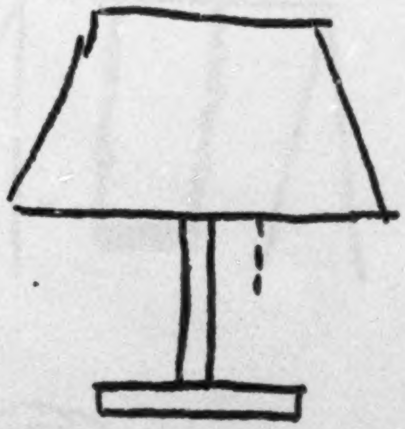


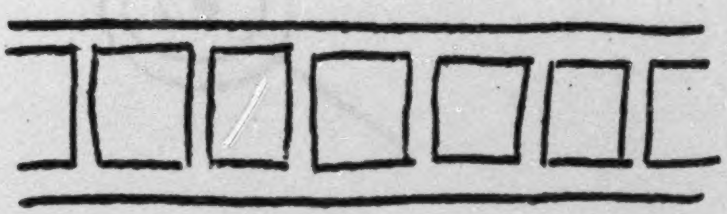


FROM TEST C

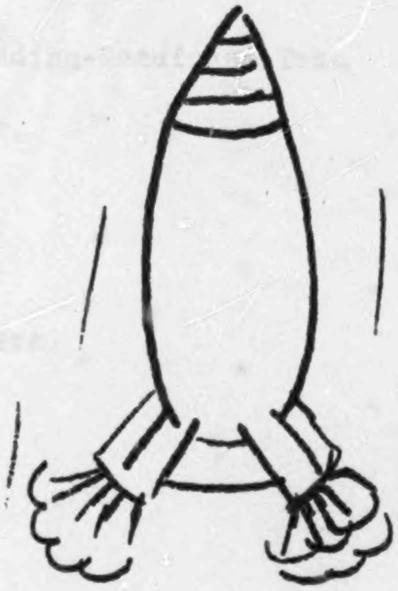


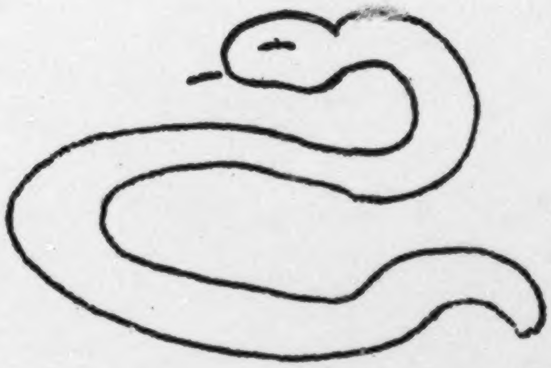


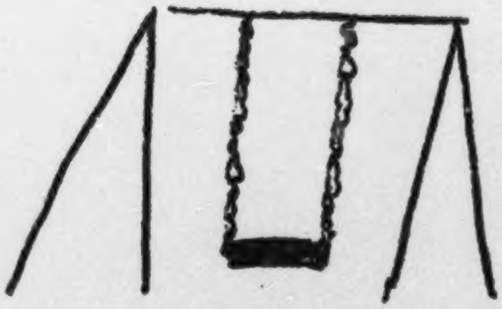


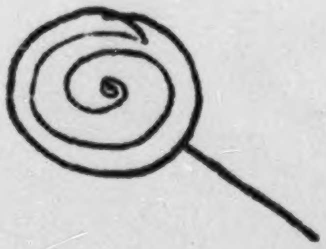


FROM TEST D







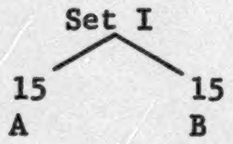


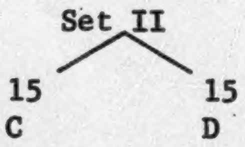
APPENDIX E

Presentation Permutations for Individual Reading-Readiness Test,
Letter Presentation Order,
Key Word Permutations,
and
Acoustically Similar Letters.

Presentation Permutations

	Child Order
A C B D	1
C B D A	2
B D A C	3
D A C B	4


Set I
15
A
15
B


Set II
15
C
15
D

Letter Presentation Order

Set I

GROUP A	GROUP B
1. F	T
2. J	K
3. R	P
4. M	D
5. S	M
6. D	J
7. G	L
8. P	B
9. B	G
10. K	S
11. L	V
12. T	R
13. H	W
14. W	F
15. V	H

Letter Presentation Order

Set II

GROUP A	GROUP B
1. S	R
2. F	M
3. K	K
4. J	D
5. B	J
6. D	P
7. T	G
8. M	H
9. P	S
10. L	F
11. G	T
12. R	B
13. H	Y
14. L	R
15. S	L

Key Word Permutations

Set I

1. Two of each: SAREP letter + incorrect SAREP-sound pictures + 3 incorrect (Non-SAREP)

   Examples: F_f rocket, house, window, wall; P_p lollipop, horse, wagon, violin

2. Two of each: Non-SAREP letter with 1 SAREP-sound picture + 3 incorrect (Non-SAREP)

   Examples: H_h snake, yo-yo, yellow, wing; W_w rocket, hose, yarn, thimble

3. One each: Use R with Rocket Picture + 3 others (at least 1 incorrect)

   Example: R_r rake, soap, rocket, coat

4. One each: Use S with Lollipop picture + 3 others (at least 1 incorrect)

   Example: S_s lollipop, sock, cat, dog

Set II

1. Non-SAREP key-word with SAREP-sound pictures

   Example: horse + radish, lemon, sled, fire engine

2. SAREP key-word with SAREP key sound incorrect words

   Example: snake + rocket, lollopip + 2 other words

3. SAREP key-word with SAREP-sound incorrect words

   Example: snake + radish, lemon + 2 other words

+ triple presentations of S, L, R key-words.

Acoustically Similar Letters

R = W

L = W

S = TH

F = P and/or TH

J = D

G = D and/or K

P = T and/or B

B = P and/or T

K = G

T = K and/or D

D = G and/or K

APPENDIX F

Newsletters to Participating Teachers

NEWSLETTER

Speech and Reading Enrichment Program

January 28, 1964

Dear SAREP Teacher:

This is the first of a series of semi-monthly Newsletters from the SAREP office. You are now into your third week of SAREP and, I hope, having success with the exercises. I trust that presenting SAREP to only one of your classes (experimental) is not proving too confusing. Please remember to keep a list of SAREP suggestions and unusual classroom occurrences as you go through the Manual.

I plan to visit with you the week of February 3-7. Here is the schedule of visitations:

Monday, February 3	Martin Park	Mrs. Bierhaus Mrs. Novaria	3:00 p.m.
Tuesday, February 4	Emerald School	Mrs. Hawley Mrs. Miller Mrs. Putnam Mrs. Smith	noon
	University School	Mrs. Schipper	3:15 p.m.
Wednesday, February 5	Paddock	Mrs. Arnold	11:15 a.m.
		Mrs. Ferguson	3:15 p.m.
Thursday, February 6	Louisville	Mrs. Porter	11:00 a.m.
	Arapahoe	Mrs. Roper	2:45 p.m.
Friday, February 7	Lincoln	Mrs. Knotts	11:15 a.m.

If for any reason my visit comes at an inconvenient time, please call me at 443-2211, Extension 7436 or 6446.

I'll see you next week.

Cordially,

(Mrs.) Rita S. Weiss
Co-Director, SAREP
Project No. 2299

RSW:dw

February 11, 1964

Dear SAREP Teacher:

It was very pleasant and helpful to visit with all of you and to chat with you about how SAREP was progressing.

You are now working on the Bubble Sound in the Manual. However, let me caution you that you are about to encounter one of the most defective and difficult sounds for your children in the entire program: S, the Snake Sound. You are likely to hear more children make articulation errors with the S than you have with the less defective sounds like M and B. Therefore, I would like to remind you that you should not correct any child for mispronouncing the S, or any of the other SAREP sounds. The purpose of SAREP, as you recall, is to have the child learn naturally from you and from his peers in a total class activity without direct criticism or correction. That is why the only time the child is called upon to respond individually is on the very last day of the sound series, with the Roll Call Game.

Just one more word of caution: remember to continue to present SAREP to your experimental class ONLY. I realize this may be difficult, but we do not want to contaminate the entire study after all of you have worked so hard and so conscientiously!

I plan to observe the children in the classrooms February 18-25. Here is the schedule of observations:

Tuesday,	Emerald School	Mrs. Miller	8:20 a.m.
February 18		Mrs. Hawley	8:45 a.m.
		Mrs. Hawley	10:30 a.m.
		Mrs. Miller	1:20 p.m.
Wednesday,	Arapahoe	Mrs. Roper	12:45 p.m.
February 19	University Hill	Mrs. Schipper	2:00 p.m.
Thursday,	Martin Park	Mrs. Bierhaus	8:00 a.m.
February 20	Paddock	Mrs. Arnold	10:15 a.m.
	Martin Park	Mrs. Novaria	1:00 p.m.
	Paddock	Mrs. Ferguson	2:00 p.m.
Tuesday,	Lincoln	Mrs. Knotts	8:40 a.m.
February 25	Louisville	Mrs. Porter	9:15 a.m.

If for any reason these observations come at an inconvenient time, please call me at 443-2211, extension 7436 or 6446.

Cordially,

Mrs. Rita S. Weiss
Co-Director, SAREP
U.S. Office of Education Project
No. 2299

RSW:dw

February 20, 1964

Dear SAREP Teacher:

Visiting with you and the children in your classrooms has been a delightful experience. Being able to observe SAREP in operation is most rewarding for a desk-bound researcher!

You are now working on the second week of the Snake Sound in the Manual. This is the first sound to be presented for two consecutive weeks because the S is one of the most defective speech sounds. Please be patient during the Snake exercises with those children who have lost their front teeth; it is rather difficult to be good "snake-keepers" when some of the "cage-bars" are missing!

Two events in March and April, the Metropolitan tests and parent conferences, have necessitated a change in the SAREP Manual calendar. Please insert the following schedule changes into your Manual for reference:

March 9, 13, 16, 17	P-The Popcorn Sound (omit Roll Call Game)
March 10-12	Metropolitan tests
March 18, 19, 20, 23, 24	K-The Coughing Sound
March 25, 26, 27, April 6	J-The Jumping Jack Sound (omit Roll Call Game)
April 7-10	Parent Conferences

The order of days (Monday, Tuesday, etc.) for the exercises will be altered for a few weeks because of the unavoidable changes.

I trust the omission of some letters from the reading workbook will not prove too troublesome. These letters can be taught after the completion of SAREP during May.

Feel free to call me if any SAREP problems arise: 443-2211, tensions 6446 or 7436.

Cordially,

(Mrs.) Rita S. Weiss
Co-Director, SAREP
U.S. Office of Education
Project No. 2299

RSW:dw

March 3, 1964

Dear SAREP Teacher:

There will be a meeting of all teachers in the SAREP research on Tuesday, March 17, at 4 p.m. in the Central Building on Walnut Street in Boulder. We will meet in the conference room building where we met before.

Please bring your SAREP Manual as there will be some changes to make in the remaining exercises. Also, bring all suggestions and problems that may have arisen since I saw you last.

I am looking forward to seeing you on the 17th.

Cordially,

(Mrs.) Rita S. Weiss
Co-Director, SAREP
U.S. Office of Education
Project No. 2299

RSW:dw

April 7, 1964

Dear SAREP Teacher:

I hope you had a restful, happy Easter vacation, and that your children returned to school full of eagerness to learn many new things.

We are coming into the "home stretch" for SAREP. It is rather difficult for me to believe that the project will end in about a month. You have been wonderfully cooperative and patient as we smoothed out some of the wrinkles in SAREP. I hope you know how grateful we are for your help.

I plan to observe the children in the classrooms April 14-21. Here is the schedule of observations:

Tuesday, April 14	Emerald School	Mrs. Miller	8:20 a.m.
		Mrs. Hawley	8:45 a.m.
		Mrs. Hawley	10:30 a.m.
		Mrs. Miller	1:20 p.m.
Wednesday, April 15	Arapahoe	Mrs. Roper	1:00 p.m.
	University Hill	Mrs. Schipper	2:00 p.m.
Thursday, April 16	Martin Park	Mrs. Bierhaus	8:00 a.m.
	Paddock	Mrs. Arnold	10:15 a.m.
	Martin Park	Mrs. Novaria	1:00 p.m.
	Paddock	Mrs. Ferguson	2:00 p.m.
Tuesday, April 21	Lincoln	Mrs. Knotts	8:40 a.m.
	Louisville	Mrs. Porter	9:45 a.m.

If for any reason these observations come at an inconvenient time, please call me at 443-2211, extension 7436 or 6446.

Cordially,

(Mrs.) Rita S. Weiss
Co-Director, SAREP
U.S. Office of Education
Project No. 2299

RSW:dw

April 30, 1964

Dear SAREP Teacher:

This is the last in the series of SAREP Newsletters. I hope the hearing testing is going smoothly and that your classroom schedules are not being disrupted.

On Tuesday, May 5, there will be a meeting of all SAREP teachers at 4 p.m. in the Central Building on Walnut Street in Boulder. As I may have mentioned, this meeting will be exclusively for teachers, and no administrative types (!) will be there. It is important that you attend, as the purpose of the meeting is to write a cooperative teacher evaluation of SAREP goals and methods.

I am asking each SAREP teacher to make an individual anonymous evaluation of the SAREP project on the enclosed form. Feel free to write criticisms, suggestions and objections as well as overall impressions of the program. Dr. Charles Goetzinger of the CU staff will be at the meeting briefly to start things off and to collect the individual evaluations, so please complete the form before the May 5th meeting.

Here is the calendar for the remaining weeks of SAREP:

May 5:	SAREP Teachers' Evaluation Meeting, 4 p.m., 1440 Walnut
May 11 - 15:	Post-test tape recording of all SAREP children (schedule to follow)
May 18-29:	Reading Readiness Testing of SAREP children, by Dr. Helen Kyle.

I understand that some schools have field trips and other special events planned during May. If you can let me know about these special events, I will try to adjust the May SAREP testing schedule to fit your needs. Also let me know if you cannot attend the May 5 meeting. (443-2211, Extensions 7436 or 6446)

Again, many thanks for your encouragement, help and advice with SAREP.

Cordially,

(Mrs.) Rita S. Weiss
Co-Director, SAREP
U.S. Office of Education
Project No. 2299

RSW:dw

APPENDIX G

Instructions for Tape Recording

Procedure for Articulation Test Taping

A. Before you leave for the school:

1. Pick up recorders, tapes, articulation cards and lists at the Speech Clinic.
2. If a university car is assigned to you, pick it up at the garage at 30th and Arapahoe.
3. Be sure you know what school you're going to and how to get there.
4. Be at the school at the time shown on the schedule.

B. When you get to the school:

1. Report to the Principal's Office and find out where the recording rooms are. Then report to the teacher of the class you will be taping. Explain what you will be doing to the class. You can say something like, "Some children's voices were recorded last year when they were in kindergarten. Today we are going to record their voices again. I will show them some pictures on a card and they will tell me what they see. Only those children who were recorded last year will be called today. We will call them one at a time."
2. Make sure all equipment is working adequately.
3. Check the articulation cards to see that they are in numerical order.
4. If any problems arise that you can't solve, call:
   Steve Farmer - 442-7281, or 443-2211, Ext. 6445
   Mrs. Wolff - 443-5645, or 443-2211, Ext. 7436
   Mrs. Weiss - 442-5414

C. When you tape:

1. Be sure to record at speed 7½.
2. State the school number, teacher number at the beginning of the tape. Give the child's number before you start each test.
3. Be sure the recorder is recording the child's voice properly. He should be speaking approximately 8" from the microphone. Watch the flickering light on the recorder.
4. Record ONLY the child's voice, not your own.
5. Be sure the child says the correct word. If he does not, stop the recorder and give the child the sentence written on the back of the card. If he still doesn't know, give him the correct word. Proceed with the taping, having him say the correct word.

6. When one child leaves, have him send another one to the taping room if it is feasible. The teacher should have a list of the students in her class who are to be taped, so ask her if this procedure would be all right.
7. It is not necessary to record in the order shown on the list. Be sure to mark the absentees. Ask the teacher when it would be convenient for someone to come back and tape the absentees.
8. When you are finished with the names on your list, put your name at the bottom of the sheet. Check with the other tapers to see if you can help them.
9. Put a piece of paper in the reel where you have stopped, and rewind the tape. Mark on outside of box the name of the school, name of the teacher, and the date.

D. When you leave:

1. Thank the Principal and the teacher for their cooperation.
2. Be sure to bring articulation cards, tapes, and recorders (if they're ours) back to the Speech Clinic at the end of the day. If Mrs. Weiss' office is locked, put them on the table in the kitchen.
3. Take university cars back to the garage.

APPENDIX H

Instructions to Speech Raters

1. Use one SAREP rating sheet for each subject.
2. Use phonetic alphabet for notation.
3. Note all phonemes which are omitted, added, distorted or for which there are substitutions.
4. Use these symbols for notations:

   -x = omitted phoneme
   +x = added phoneme
   -x-= distorted phoneme
   y/x= substituted phoneme

5. Rate overall speech performance:

   1 = excellent
   2 = average
   3 = poor

6. Rate Tape I as practice rating. Re-rate Tape I.
7. Use Master phonetic sheet as phonetic guide.

APPENDIX I

Instructions for Individual Reading-Readiness Test

Set I

1. "Which of these begin with the sound that this letter makes?"
2. Tester names and points to all pictures.
3. "Tell me."

Set II

1. "Which of these begin with the same sound that FIGHTING begins with?"
2. Tester names and points to all pictures.
3. "Tell me."

APPENDIX J

Questionnaire for

Teacher Evaluation of SAREP

1. Did SAREP fit easily into the Reading-Readiness Program? Yes____ No____
   If No, describe the difficulty.

2. Were the children able to understand and follow the SAREP exercises? Yes____ No____
   If No, which exercises were not effective? Please describe.

3. How would you rate the students' enthusiasm for the SAREP exercises?
   High____
   Medium____
   Low____

4. How would you rate your enthusiasm for the SAREP exercises?
   High____
   Medium____
   Low____

5. Did the application of a name to each sound (e.g. Lollipop for L) assist in:
   a. establishing the beginning sound concept Yes_____ No_____
   b. sound/letter recognition Yes_____ No_____
   c. general auditory discrimination Yes_____ No_____
   d. more precise articulation of individual sounds Yes_____ No_____
   e. other carry-over (describe)

6. Did you have any examples of pupils criticizing other pupils for mispronunciation of beginning sounds? If Yes, please describe. **Yes____ No____**

7. Were props helpful (e.g., mirror, objects for auditory discrimination game)? **Yes____ No____**

Please use the second page for a general evaluation of SAREP, and your overall impression of the effectiveness of the program. Please keep the two sheets together.

APPENDIX K

Group Evaluation of SAREP

TEACHERS' MEETING May 5, 1964

SAREP is worthwhile for:

1. Mechanics of articulation in group situation; may overcome minor speech defects without pointing out individual.

2. Facilitates understanding of "beginning sounds" concept. Perhaps with more mature children helps them "sound out" words.

3. Most like use of naming the sound. In some cases, (i.e., snake, fighting cat, gulpy frog) the name could be improved upon. "Acting out" in some cases leads to undesirable behavior -- should be carefully thought out.

4. Naming names game not successful. Would it be better to use objects or any words they can think of?

5. If a manual is to be used in the future, should be considered only as a point of departure with teachers urged to be creative beyond it.

6. If used next year (group would like to) urge SAREP to be used first semester before workbooks, as preparation for more formal work. SAREP then could be reviewed during workbooks as additional informal review.

7. Would like sounds of SAREP introduced in developmental speech order -- not workbook order.

Mrs. Knotts, Secretary of group

APPENDIX L

Computer Information

Computer programmer = N. John Castellan, Jr.

Program used = T-test program with simple random sampling.
IBS - 010

APPENDIX M

Item Analyses on

Individual Reading-Readiness Test

Point-Biserial Correlations

TEST A, B

LETTER	TEST A				TEST B			
	AM-Exp	AM-Con	PM-Exp	PM-Con	AM-Exp	AM-Con	PM-Exp	PM-Con
B	.355	.516	.557	.561	None			
D	.202	.615	.673	.489	.373	.604	.457	.453
F	.530	.501	.559	.513	.624	.694	.575	.540
G	.393	.458	.602	.619	.513	.644	.564	.643
J	.617	.618	.636	.785	.645	.542	.300	.000
K	.509	.540	.472	.469	.588	.682	.351	.000
L	.510	.632	.607	.747	.684	.578	.500	.454
M	.480	.438	.738	.483	.697	.675	.282	.538
P	.581	.650	.688	.586	.470	.542	.183	.499
R	None				.642	.384	.314	.210
S	None				.642	.384	.314	.265
T	.613	.520	.692	.561	.472	.751	.235	.323

Exp = SAREP

Con = Control

Point-Biserial Correlations

TEST C, D

KEY WORD

	AM-Exp	AM-Con	PM-Exp	PM-Con	AM-Exp	AM-Con	PM-Exp	PM-Con
B-bubble	.519	.736	.634	.410	.654	.758	.715	.677
D-ding-dong	.483	.592	.683	.487	.604	.658	.562	.701
F-fighting cat	.620	.604	.637	.745	.740	.819	.701	.549
G-gulping frog	.675	.718	.507	.572	.625	.616	.560	.504
J-jumping jack	.450	.375	.655	.565	.658	.722	.326	.139
K-coughing	.386	.600	.605	.600	.642	.503	.552	.647
L-lollipop	None				.285	.591	.473	.101
	.601	.513	.780	.370	None			
M-mouth	.000	.465	.478	-.135	.316	.443	.730	.726
P-popcorn	.616	.607	.586	.170	.593	.676	.470	.555
R-rocket	.610	.634	.676	.561	.689	.775	.522	.557
	None				.586	.548	.701	.579
S-snake	.473	.592	.791	.688	None			
	.423	.431	.881	.204	None			
T-tick-tock	.423	.431	.881	.204	.746	.493	.634	.268

Exp = SAREP

Con = Control

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